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THE JOURNAL

OF THE

American Medical Association

Annual Subscription, $5.00 | PUBLISHED WEEKLY | Single Copies, 15 Cents

Vol. LXVIII, No. 16 | **535 North Dearborn Street, CHICAGO, ILL.** | **APRIL 21, 1917**

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ENTERED AS SECOND-CLASS MATTER, JUNE 25, 1885, AT THE POSTOFFICE AT CHICAGO, ILLINOIS, UNDER ACT OF MARCH 3, 1879.
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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. LXVIII, No. 16 CHICAGO, ILLINOIS APRIL 21, 1917

ACUTE POLIOMYELITIS

EARLY DIAGNOSIS AND SERUM THERAPY *

GEORGE DRAPER, M.D.

NEW YORK

I. DIAGNOSIS

So far as we know, paralysis is the only undesirable result of acute poliomyelitis. Consequently, therapeutic effort should be directed to prevent this accident. It is becoming increasingly evident that most patients with the disease never develop muscular weakness, and, indeed, that paralysis is an accidental and incidental occurrence in the latter part of the course of an acute systemic infection. No treatment, save that to make a febrile patient comfortable, is needed, therefore, in many cases. But because the chance of crippling exists, we must be prepared to use promptly any safe methods which will prevent the establishment of damaging lesions in the cerebrospinal nerve tissue.

In order to discuss intelligently, however, the use and value of any procedure designed for this purpose, it is necessary first to study in detail the clinical course of the disease in man. Furthermore, it is obvious that to make statistical comparisons of untreated and treated series of cases is an impossible method of reaching a proper valuation of the serum therapy in this disease. The apparent fluctuation in virulence of the virus in different localities and periods during an epidemic, the wide range of individual susceptibility and, finally, the peculiar sequence of events in the clinical course of the disease itself make up an array of forces difficult to equalize when we try to weigh the effect of treatment by comparing untreated and treated groups.

There remains, then, the more tedious but essential task of studying individual examples of the disease. These have been selected from the 300 as examples of the various types. By comparing untreated and treated instances from the same locality and period, and especially by comparing the spinal fluid with regard to the hour of its removal in the course of the disease, a more definite judgment of serum therapy in poliomyelitis may probably be made.

The untreated cases have been arranged in three groups according to the clinical course. The first group, called the dromedary group, shows the curious phenomenon of two different periods of illness with an interval of well-being. In the second group this period of comparative well-being is not present, but there is a sustained period of indisposition of varying intensity. This is called the straggling group. In the third group only do we have all the signs pointing from the start to meningeal and nervous involvement. This we have called the sudden onset group. A striking thing is that the second portion of the first two groups is very similar to the whole course of the sudden onset group.

There will be no further routine description of the clinical picture of the disease than that which can be derived from reading the case reports presented here. One physical sign of great importance, however, must be mentioned especially. It depends on the fact that in acute poliomyelitis any manipulation which brings about anterior bending of the spine causes pain and therefore is resisted by the patient. The resulting stiffening of the body has generally been loosely described as "stiff neck" or "Kernig's sign," but there is an essential difference between these reflex phenomena of meningeal irritation and the voluntary protective rigidity assumed by the patient with poliomyelitis to prevent anterior flexion of the spine. This conscious effort is often carried to a moderate degree of opisthotonos and is the cause of the unwillingness of children with this disease to be picked up and handled even by the mother. Attention was called to this sign in the monograph from the Rockefeller Institute in 1912, and we refer to it here as the spine sign.

In the first two groups there develops a picture of general systemic infection from which the child appears to recover completely, or in part, and then to receive a second blow directly on the cerebrospinal tract. Because of the two distinct groups or humps of symptoms, the analogy to the arrangement of the dromedary's back was taken to express the type figuratively. The temperature curve often shows two elevations, but the figure refers to all the signs and symptoms of each group or hump, whether or not there is a rise of temperature in both. The total duration of the combined phases may vary from a few hours to many days, while the intensity of either phase, the systemic or the meningeal, may touch the extreme of violence or such mildness as to escape detection. In the systemic stage, or first hump, of a well marked case the clinical picture is that of almost all of the acute infections of childhood — a flushed, uncomfortable, feverish child; in the meningeal stage, or second hump, there are added the special signs and symptoms of meningeal irritability. It becomes at once obvious that the so-called "abortive" types are in all probability examples of the disease in which the first stage or hump

* Owing to lack of space, this article is abbreviated in THE JOURNAL by omission of tables and many case reports. Reprints of the complete article may be obtained from the author.

* The material which forms the basis of this report is drawn from among 300 or more cases observed on Long Island by the diagnosticians of the New York State Department of Health, working from the laboratory at Roslyn. The cases have been selected from groups seen by various members of the diagnostic staff to illustrate certain points, and have been presented as an essential part of the whole discussion.

constitutes the entire course of the malady, the meningeal stage either never occurring, or, if it does, in so slight a form as to pass unrecognized. The term "abortive" consequently gives a wrong impression, for the termination of the disease at the end of the systemic phase is the more usual occurrence. It would be more correct to speak of acute poliomyelitis, with or without paralysis. In order to discuss the mechanism of this peculiar series of events it is necessary to consider certain experimental problems which bear on the disease.

UNTREATED CASES

DROMEDARY GROUP

CASE 1.—*History.*—S. L., boy, aged 9 years, of Northport, L. I., Sept. 8, 1916, complained of headache and fever. This lasted twenty-four hours. He was then all right for the ensuing eight days.

September 17: The headache and fever returned (eight day interval). He was constipated for the following two days.

September 19: The child vomited several times during the last eighteen hours. His temperature was 100.4. There was muscle tenderness in the thighs and calves. There was a suggestion of left facial weakness. There was no spine sign. Lumbar puncture was performed at forty-eight hours; the fluid was clear, the pressure normal, cells 40. Globulin was negative. No further paralysis developed.

staring and glassy in appearance. The tonsils and pharynx were considerably congested, but without exudate. The heart and lungs were negative. The abdomen was normal. In the extremities there was no paralysis or muscular weakness. The knee jerks were markedly exaggerated, + + + +, most marked on the left side. Kernig's sign was marked on both sides, most on the left. The skin reflexes were active. There was slight rigidity of the neck, and hyperesthesia. Spinal puncture was performed at twelve hours. The fluid was clear under pressure. About 12 c.c. were obtained. The cell count was 250.

September 2: The patient seemed to be completely well twenty-four hours after puncture and has had no subsequent paralysis or complications.

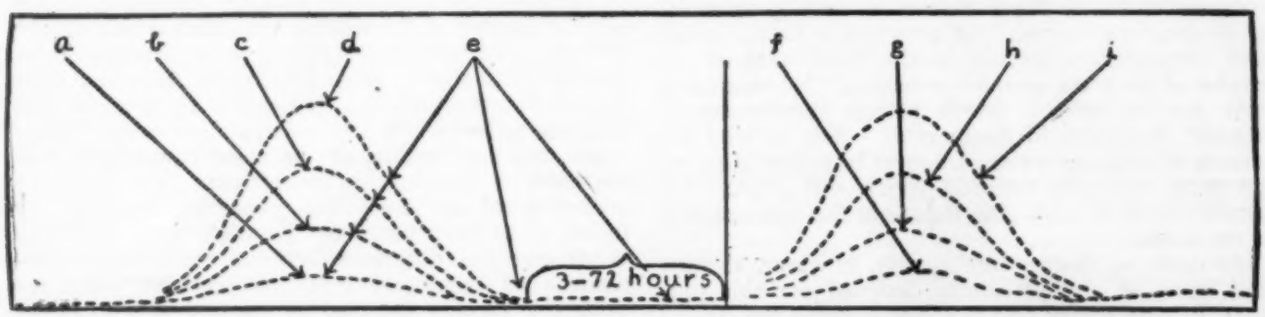
Comment.—This is an example of the unimportant impression that the early days and hours of the disease make on the mother. Yet the suggestion is clearly of an indefinite period of "out of sorts" preceding the headache of August 18.

SUDDEN ONSET GROUP

CASE 26.—*History.*—D. S., girl, aged 14 years, of Babylon, L. I., Aug. 21, 1916, had a gone feeling in the stomach.

August 22: The patient had a pain in her neck and right shoulder. The temperature was 102, pulse 130.

August 23: The patient had a slight pain in the shoulder. Examination revealed no paralysis. The left knee jerk was less than the right. The patient was irritable and had slight stiffness of the neck. She was menstruating. Puncture was



To left of vertical line, period of general infection, before penetration of choroid. Puncture should be repeated every eight to twelve hours to catch beginning of meningeal invasion. Any combination of curves in this period and the period of meningeal invasion possible. Termination of disease most frequent in this period. To right of vertical line period of meningeal invasion. Serum most valuable in first twelve hours. Group *f* does not need it. *a.* Child dull for a few hours; sits around; mother forgets about it after a day. *b.* Child has slight rise of temperature—99; constipation, "green apples," etc., as cause; looks tired; may be irritable. *c.* Child definitely sick; vomits; temperature from 99 to 101; irritable, flushed; looks actively ill. *d.* Severe acute general infection—glassy bright eye—resentful look, drowsiness and irritability alternating; temperature 102; vomiting or not; flushed; no meningismus. *e.* Lumbar puncture fluid clear; pressure slight or greatly increased; amount increased; cells from 0 to 5; globulin 0, —, ± or +. *f.* Very slight spine sign, headache; fluid; pressure + + +, clear; cells from 10 to 100; globulin +, —, + +; usually no paralysis. *g.* Slight spine sign; hyperesthetic; reflexes + + or irregular; spinal fluid clear, pressure + +; cells from 100 to 300; globulin + +; may develop transient or facial paralysis. *h.* Definite spine sign; headache; reflexes + +; hyperesthetic; spinal fluid clear or slightly hazy or flocculent; cells from 200 to 700; pressure moderate; chance of paralyses great. *i.* Striking meningismus; spinal fluid hazy, pressure normal to +; cells from 500 to 2,000; globulin + + +; stupor, twitchings; sure paralyses or death.

Comment.—This case illustrates the common phenomenon met in this disease of two distinct febrile periods with a free interval. Here the first period lasted twenty-four hours, the interval eight days (rather longer than usual), and the second period from eighteen to twenty-four hours. In the last period the facial weakness developed.

This we have called the "dromedary" type of case because of the two "humps" in the temperature curve. The significance of these cases is considerable, and a discussion of them will be deferred until other examples of the type have been presented.

STRAGGLING GROUP

CASE 17.—*History.*—M. A., boy, aged 4½ years, of Fort Washington, L. I., Aug. 17, 1916, had been drowsy and very irritable for several days.

August 18: This morning the child had fever. There were headache and pain in the back of the neck last night, about twelve hours ago. The child was constipated for several days previous to this, and was given numerous cathartics without success. The mother states that last night she gave the child castor oil but he vomited it. The family physician saw the child about an hour ago and found his temperature 103. The boy was lying in bed and apathetic. The eyes were

performed at forty-eight hours. There was no increase in pressure; 504 cells.

September 3: The patient had completely recovered, without paralysis.

Comment.—It is a question whether the first complaint of "gone feeling in the stomach" represents the beginning of the disease or the beginning of central nervous system involvement. The early appearance of pain in the neck and shoulder suggests the latter. Consequently the case is grouped among those with "sudden onset." The high cell count at such an early stage would have made a paralysis not unexpected. None developed.

CASE 31.—*History.*—K. McL., boy, aged 18 months, of Northport, L. I., had a sister who had the disease. Aug. 19, 1916, the child was observed in bed sleeping, with no history of disease other than slight diarrhea for two days. Constitutionally he had seemed well, and was awakened from sleep for the purpose of examination and temperature. This child was well on going to bed after playing all day. At 1 a. m. the temperature was 105 F. Eyes, ears, nose and throat, heart, lungs and abdomen were normal. The neck and spine were stiff and tender. The head would not flex on the chest. Suspension by the head and buttocks caused arching of the

back and pain. The Kernig sign was positive in both legs, and no paralysis was made out in any part of the body. The reflexes were normal. Spinal puncture revealed clear fluid under normal pressure with a moderate globulin test and 320 cells. This patient was given serum, and his further history is related in connection with that group of cases.

Comment.—In this instance the mother objected to having the child awakened at 1 o'clock in the morning to have his temperature taken. The diagnostician of the health department insisted on the ground of the slight intestinal disturbance of the previous day and the fact that the sister was ill with frank poliomyelitis. This course was justified by the finding of the high temperature and high cell count. If this case had not been observed at this time, but the first observation had been made the following morning and the child found with high fever and meningeal irritation, it would have been considered a typical example of what the English call "paralysis of the morning." As the child went to bed well and waked up ill, the case would have been reported as one of sudden onset; fortunately the parents remembered the very slight intestinal upset of the previous two days which had not been sufficient to make the child stop playing. The meningeal invasion must have taken place at sometime between 6 or 7 in the evening and 1 o'clock in the morning.

CASE 35.—*History.*—W. Z., boy, aged 2 years, of Great Neck, L. I., was well until the afternoon of Aug. 12, 1916, when he was feverish and listless. He did not vomit. Spinal puncture revealed normal pressure with the fluid clear and increased in amount, no cells, with a negative globulin test.

August 13: The symptoms were the same as the day before. Spinal puncture at thirty hours revealed the fluid under moderate pressure and 90 cells. The child was sent to the hospital at Roslyn.

August 31: The child's temperature was 99.8. There was weakness of the lumbar muscle with lateral curvature in the left thoracic region. Slight spinal tenderness was observed.

Comment.—This is an instance of short course. Puncture was made a few hours after the onset of the symptoms, and showed a negative cell count and no globulin. Twenty-four hours after with the development of slight spinal signs the spinal fluid showed 90 cells. In this case there was rapid improvement, and it was not until several weeks after the acute disease that slight weakness of the lumbar muscles was discovered. In this case the period of invasion of the meninges was indicated by the consecutive lumbar puncture.

CLINICAL COURSE OF THE DISEASE: INTERPRETATION

Flexner and Amoss[1] have reported certain experiments bearing on the localization of the virus and the pathogenesis of poliomyelitis. They showed that, following the intravenous injection of the virus of poliomyelitis in monkeys, and with subsequent sacrifice of the animals at different intervals, the virus was found in the spleen and bone marrow and later in the posterior root ganglia, and, finally, in the brain and spinal cord. In other words, notwithstanding the fact that the virus of poliomyelitis has a neurotropic tendency, it is withdrawn from the general circulation primarily by the spleen and bone marrow, this event occurring shortly after infection, and before the attachment of the virus to the central nervous system. In the same report the experiment is described of the insusceptibility of monkeys to the virus of poliomyelitis, when as much as 50 c.c. is injected intravenously. Animals survive under this treatment with no signs of central nervous system disturbances. If, however, an aseptic meningitis is set up by means of an intradural horse serum injection preparatory to the intravenous inoculation of the virus, the animal succumbs to the disease.

It is further reported that when tremendously large doses of virus are given intravenously, from 250 to 500 c.c., the animals come down with the disease. The conclusions from these two suggestive experiments are that the overwhelming attack produced by the large dose breaks down the defensive power of the choroid plexus, and admits the virus to the cerebrospinal spaces. In the other instances the choroid plexus is so injured by the intradural injection of horse serum that it is no longer able to exert its usual barrier action against the toxic agents in the blood. If these experiments are kept in mind, the clinical course of the cases just described can be subjected to a more logical interpretation. A suggestive analogy becomes apparent between the first febrile period of the dromedary or straggling types, and the phenomena of lodgment of the virus in the spleen and bone marrow of monkeys after intravenous inoculation. Likewise the second hump in the human case, with its central nervous system involvement, corresponds to the late disclosure of the virus in the central nervous tissue of the monkey. Experiment has shown that the virus gains entrance with difficulty to the central nervous system tissues of monkeys subjected to intravenous inoculation. In human subjects the number of cases recognized as never giving the slightest indication of central nervous system invasion is steadily growing with our experience.

In families in which a frank paralysis case occurs, there are found so frequently other children who present persistently the same symptoms which the paralyzed child has shown in the preliminary hump that one is led to suppose that these may be examples of infection in which no penetration of the meninges occurred.

In the straggling group the same interpretation applies, the only difference being that these individuals present a continuous course with a fusion of the symptoms of the two stages. Sudden onset cases may be looked on as examples of the malady in which the systemic stage has been overlooked because of its triviality. In this group the spectacular and violent picture of meningeal disease dominates and drives the memory of the slight preceding indisposition from the mother's mind. It is difficult under these circumstances to get from the family any history of the child being unwell during the preceding days.

We have included in this group of sudden onset Case 41, in which the child was punctured at 1 a. m., having gone to bed well. This case might have been reported as one in which the child awoke with a stiff neck and high fever. Yet the parents of this child remembered that for two days previously there had been a slight and unimportant disturbance of the bowels. In other words, this case with sudden meningeal onset was an instance of typical dromedary course in which there was a preliminary hump so mild as almost to escape appreciation. Case 28, E. E. L., is another instance in which no history of early indisposition was obtained at the time of the acute onset. But later on, after the excitement of the affair was over, the mother recalled that the child complained of headache and malaise a day or two before.

In a few instances lumbar puncture has been made during what apparently was the systemic stage, and the fluid itself at this stage has been practically normal. There may be a slight suggestion of globulin increase, as appeared in two or three cases, but the pressure and volume of the fluid, in almost all instances, has been increased. The second puncture in these cases made

1. Flexner and Amoss: Jour. Exper. Med., 1914, **20**, 249.

after the signs of meningeal invasion have appeared has shown fluids with cell counts which were all above normal.

The accompanying scheme shows the plan of the foregoing interpretation of the disease. A recognition of the clinical course as described may have important bearing on the use of serum intraspinally. For as the experiments of Flexner and Amoss indicate, the injury of the choroid plexus of the meninges by the horse serum injection renders the animal more susceptible to central nervous system involvement. The question might arise, therefore, of the wisdom of giving an intraspinal injection during the period of systemic infection, or first hump. Such a procedure might conceivably convert the ordinary and usual case in which the systemic stage constituted the whole expression of the disease into a fully developed dromedary type with secondary meningeal invasion and paralysis. It must be remembered, however, that horse serum produces a more violent meningeal reaction than does the homologous human serum. But the latter is by no means a negligible quantity, for the severe pictures of meningeal irritation, with vomiting, opisthotonos and sometimes convulsions which follow human serum injections, are memorable events. Notwithstanding the intensity of these symptoms and their comparative frequency, no undesirable results have been seen to follow which are referable to the meningeal irritation. The alarming impression, however, that the child has been made much more acutely ill by the treatment is unwarranted, as the subsequent course has already proved. However, it has also been shown that after injury, set up by horse serum injection, if immune monkey serum be introduced into the canal the animal is protected from the results of intravenous injection of virus. Consequently the early use of immune human serum in human cases might be looked on as presenting possible alternative effects, on the one hand breaking down the choroidal defense, and on the other supplying the necessary antibody to neutralize the invading micro-organisms.

The discussion and interpretation of the clinical course of the disease has been of necessity an introduction to the presentation of the series of cases in which serum therapy has been carried out. The treated cases will be presented in groups as seen by different diagnosticians of the department. Some of these cases have been utilized as examples in the discussion of the clinical course of the disease.

SERUM GROUP

During the course of the study we were frequently impressed with the number of cases showing low cell counts in the first twelve to twenty-four hours after the meningeal invasion in which paralysis did not develop, and likewise the many patients with very high counts who became paralyzed. It was hoped that definite prognostic assistance might develop from this observation, but a careful subsequent analysis does not firmly establish the assumption. In fatal cases in many instances there were cell counts in the neighborhood of 1,000 or more. In the latter part of the epidemic when serum was plentiful, and the cases less violent, many patients with low cell counts were treated and recovered without paralysis. The deduction as to the therapeutic value of the serum treatment in these instances must be carefully guarded because of the fact that in many untreated cases with low cell counts the patients also escaped paralysis.

The tables constructed to show the number of hours elapsing between the onset of meningeal symptoms and the performance of lumbar puncture have been prepared with a view to comparing the results in the untreated and treated cases. A glance at these tables will show that while it is not an absolute fact that patients with a low cell count did not develop paralysis or that those with a high cell count always did, it is quite obvious that the tendency of the patients with the higher cell counts in the early hours is toward paralysis. It is indicated from these tables that after thirty-six hours the cell count in the spinal fluid is of little or no prognostic value whatever. This observation corresponds to that[2] reported in 1912. But in the cell counts in the first twelve or twenty-four hours there seems to be something of prognostic significance, as mentioned before in the general introduction. Group comparisons are not particularly valuable, especially in view of the difference in the severity of the cases according to the period in the epidemic during which they occurred.

REPORT OF CASES AS DESCRIBED BY EACH DIAGNOSTICIAN OF THE DEPARTMENT

PATIENT SEEN BY DR. HORAN

CASE 17.—*History.*—M. S., boy, aged 2 years, of Northport, L. I., Sept. 11, 1916, was feverish, vomited once and was constipated.

September 12, the fever continued. The temperature was not taken.

September 13: The child was apparently well, and was up and about today and the following day.

September 15: The temperature was 103. The child vomited last night. The knee jerks were hyperactive on the left and diminished on the right. The neck was slightly stiff. There was a slight spine sign. There was no paralysis. There was slight weakness of the right leg in the sural group and anterior tibial. Lumbar puncture, at eighteen hours, revealed the fluid clear under increased pressure. The cell count was 640. Twelve c.c. of serum were given.

September 16: The temperature was 101.5. The neck was stiff and the spine sign was present. There was no paralysis or weakness. The knee jerks were unchanged. Lumbar puncture revealed clear fluid under increased pressure. The cell count was 700. Twelve c.c. of serum were given.

September 18: The temperature was 99.5. There were no new symptoms or signs.

September 23: The child was stuporous. There was no paralysis or weakness.

September 26: Weakness of the right leg came on this morning.

September 29: There was no return of power in the paralyzed leg.

Comment.—This was a very sick child. The puncture showed 640 cells and was done eighteen hours after the onset of the second hump. Two doses of serum were given, 24 c.c. in all. An interesting feature is the delayed appearance of the paralysis, eleven days after the onset of the second hump.

PATIENT SEEN BY DR. GARLICK

CASE 20.—*History.*—H. K., boy aged 19 months, of Valley Stream, L. I., Aug. 26, 1916, felt feverish, the mother noticed, and later in the day began to vomit.

August 27: The child was very irritable, complained of pain in the back of the neck and head, and was extremely drowsy. There was no diarrhea or constipation. The child lay in bed with slight retraction of the neck. He was very irritable and evidently was in pain. The eyes were normal. The throat was congested. The cervical and inguinal glands were palpable. The lungs and heart were negative. There was slight weakness of the abdominal muscles. The extremities showed no apparent weakness. The knee jerks were

2. Monograph 4, Rockefeller Institute Series, 1912.

absent. Other reflexes were normal. There was a slight Kernig sign on both sides. Meningismus was marked. The temperature was 102, pulse 140, respiration 18. Puncture, after thirty-six hours, revealed slightly turbid fluid under slight pressure. The cell count was 950; globulin +. Fifteen c.c. of serum were given.

August 28: The patient was not so well. The diaphram was paralyzed. Respirations were rapid and difficult. The child was slightly cyanotic. There was no further paralysis. Fifteen c.c. of serum were administered.

August 29: The child was extremely cyanotic. The respirations were rapid, shallow and irregular. The pulse was 160, and very weak. The child grew worse and died at 3 p. m. from respiratory failure. Lumbar puncture was made probably thirty-six hours after the onset of meningeal symptoms. Weakness was already present. The cell count was 950.

PATIENTS SEEN BY DR. LEAKE

CASE 22.—*History.*—O. N., boy, aged 19 months, of Hempstead, L. I., Aug. 19, 1916, became restless and irritable. On the following day he was drowsy all day long and his mother stated that he had fever. He had not vomited.

August 21: Yesterday and this morning the child's arms have twitched convulsively at times. The temperature was 100.6. The child lay on his back in no apparent pain. His face flushed and the eyes were unusually bright. The neck was extremely rigid, and the child cried out when it was flexed. The throat was red. The cervical and inguinal glands were palpable. The chest and abdomen were negative. The muscles of the face and eyes were in a semispastic condition. The knee jerks were very sluggish. The Kernig sign was mild. When placed on his feet the patient was markedly ataxic. Lumbar puncture revealed a clear fluid under slightly increased pressure. The cell count was 620; Noguchi + + +; Pandy + + +; Ross-Jones + + +. The patient was very sick and apathetic. At 3:30 the same day a lumbar puncture was performed and 15 c.c. of clear fluid withdrawn. Fifteen c.c. of serum were injected intraspinally. The child appeared bright. There was no definite paralysis, but the knee jerks were absent. It was desired to remove the child to a hospital, but there was no place to take him at the time.

August 22: At 9:30 a. m., 15 c.c. of clear fluid were withdrawn by lumbar puncture. Fifteen c.c. of immune serum were given intraspinally. The child appeared brighter. There was no definite paralysis, but the knee jerks were absent.

August 27: The child was drowsy. There was partial paralysis of the left lower extremity.

August 31: At 4 p. m. the temperature was 98. Paralysis of the left extensor groups continued. There was weakness of the same group in the right leg. Ankle and knee jerks were absent. There was slight spinal tenderness.

Comment.—Here the diagnostic puncture showing 620 cells was done about thirty hours after the onset of symptoms. Serum was not given until thirty-five hours after. The case was a very severe one. Paralysis did not appear until the seventh day. Two doses of serum were given, 30 c.c. in all.

CASE 25 A.—*History.*—C. L. P., boy, aged 10 months, of Sayville, L. I., Aug. 24, 1916, had green stools and a temperature of 102. Oil was given.

August 25: The child appeared much better and did not vomit. The temperature was 98.6.

August 26: The child was rather drowsy and irritable.

August 27: The temperature was 103.2. The fontanel did not bulge. The eyes were negative, the throat rather red. There was no rigidity of the neck. The cervical and inguinal glands were enlarged. The chest and abdomen were negative. The knee jerks were exaggerated, especially on the right side. Apparently there was some weakness of the right quadriceps and psoas. Lumbar puncture revealed clear fluid under increased pressure. The cell count was 50 at seventy-two hours.

August 29: Ten c.c. of serum were given at 11 a. m., at seventy-two hours. The temperature at this time was 103, and respirations about 80 per minute. The temperature rose in a few hours to 104, the respirations became more shallow, and at 7 a. m. it was thought that death would supervene. In a short time it was thought that the child could not swallow well. Since this time there has been a progressive improvement.

August 31: The child was reported as seemingly perfectly well.

September 1: Complete recovery had occurred. Paralysis of the pharynx was only transitory.

Comment.—This patient showed 50 cells at seventy-two hours. Ten c.c. of serum were given at seventy-eight hours. There was transient weakness of swallowing. The child was much worse after the administration of serum. The patient was breathing 80 per minute at the time the serum was given. The serum should have been withheld, but the father, a physician, insisted that it be given.

PATIENT SEEN BY DR. DRAPER

CASE 28.—*History.*—E. E. L., girl, aged 3 years, 10 months, of Oyster Bay, L. I., was suddenly seized at 10 a. m., Aug. 21, 1916, with pain in the back of the neck. She continued to play until 12 o'clock, when she gave up and began to be feverish. She became rapidly worse. At 3 p. m. her temperature was 102.6. At 7:45 p. m. it was 102.4. She was a well nourished child, and presented an acute febrile picture, with definite fine ataxic tremor on motion. The knee jerks were absent. She was apprehensive and nervous. There was no weakness. Spinal puncture revealed the fluid hazy, under normal pressure. The cell count was 2,430. Fifteen c.c. of serum were given.

August 22: At 7 a. m. the child was slightly improved. She had a fair night with six hours' sleep. The bowels had not moved and no food had been taken since the last visit. There were stiffness and tenderness of the neck and spine, and a positive Kernig sign in each leg. No paralyses or weaknesses were made out. The temperature was 102.2. Twenty c.c. of cloudy fluid were withdrawn under normal pressure. Examination of this fluid at the bedside showed it to contain 2,220 cells and no red cells. The globulin reaction was very marked. Fehling's reaction was positive.

August 22: At 9:30 p. m. the patient rather suddenly assumed an opisthotonos position. The temperature was 103. The face was quite flushed, the breathing somewhat rapid. Fifteen c.c. of serum together with 1.5 c.c. of epinephrin chlorid were given intraspinally. No cell count was made.

August 24: The temperature was about 1 degree lower than on the previous day. Opisthotonos still continued, and paralysis of the right arm with weakness of the left, with cyanosis of the lips and face and evidence that the accessory respiratory muscles are involved. Spinal puncture was performed. Fifteen c.c. of serum together with 1.5 c.c. of epinephrin were given. The cell count was 250.

August 25: At 10 a. m. the patient's condition was very poor. The temperature was high, the pulse rapid, the patient's appearance cyanotic. Two c.c. of epinephrin chlorid were administered intraspinally. The child died at 11:30.

Comment.—There was overwhelming infection. Puncture and first treatment ten hours after the onset of meningeal symptoms revealed 2,430 cells.

It is interesting to note that after two months the mother remembered, what she had failed to mention at the time of the child's sickness, that the child had been feeling poorly on the previous day. Possibly this case, then, which has been reported in the group of sudden meningeal onsets, belongs to the group of straggling courses with a very short duration.

PATIENTS SEEN BY DR. ST. LAWRENCE

CASE 41.—*History.*—K. McL., boy, aged 18 months, of Northport, L. I., Aug. 17, 1916, had slight diarrhea. His sister had the disease.

August 19: Child is in bed sleeping, with no history other than the slight diarrhea for two days. Constitutionally he seems well and was awakened for the purpose of examination and the taking of the temperature. Physical examination at 1 a. m. revealed the temperature 105; eyes, ears, nose, throat, heart, lungs and abdomen normal; neck and spine stiff and tender. The head would not flex on the chest. Suspension by the head and buttocks caused arching of the back and pain. Kernig's sign was positive in both legs. No paralyses were made out in any part of the body. The

reflexes were normal. Spinal puncture revealed clear fluid under normal pressure with a moderate globulin test. The cell count was 320. This child was well on going to bed after playing all day. Fifteen c.c. of serum were given intraspinally after drainage of the cord.

August 20: At 2:30 p. m. the child seemed better and took food fairly well. The bowels were about the same as before. The temperature had dropped to 103. The child seemed less toxic.

Note.—On the 18th the temperature showed a critical drop to 99, where it remained for about eight hours. On the 20th the temperature was 98. The child felt better and showed no paralysis.

August 21: At 2:30 p. m. lumbar puncture was performed and the cell count found to be 540. Fifteen c.c. of serum were given intraspinally.

August 6: A report from the boy's father stated that the boy showed a normal temperature three days after he was seen and that he had made a perfect recovery with no paralysis.

Comment.—This case is interesting because of the unusual way in which the disease was recognized. The meningeal invasion must have occurred between the previous evening and 1 a. m., when 320 cells were found. This patient received two doses of serum, 30 c.c. in all. The first treatment was not later than seven hours after meningeal invasion.

Case 43.—*History.*—W. C., boy, aged 4 years, of Inwood, L. I., on the afternoon of Aug. 24, 1916, complained of not feeling well. He did not want to play. He had no pain. He did not vomit. The bowels moved only after medicine. The temperature was 101, the pulse 150. The pupils were unequal, and slow in reacting. The child was apathetic and hyperesthetic. The knee jerks were present, but slight. Kernig's sign was slight. The neck was stiff and painful. Lumbar puncture, at eight hours, revealed clear fluid under pressure. The cell count was 215.

August 25: The temperature was 101. The child was said to be about the same as before. The neck and back were stiff and tender with a considerable retraction of the former. There was no Kernig's sign or paralysis. The child appeared toxic and definitely of the meningeal type. Spinal puncture was performed; 15 c.c. of clear fluid were withdrawn. The cell count was 150. Fifteen c.c. of reddish serum from a cured patient received from Willard Parker were injected into the spine.

August 26: At 12:30 p. m. the temperature was 101. The child appeared to be more toxic and considerably worse than the day before. He had had two or three greenish, watery movements, which showed undigested grape and pear. He vomited once after serum injection; it was not projectile in type. Physical examination revealed the neck and back markedly retracted. Kernig's sign was marked. The lips and tongue were very dry and cracked. The child was very toxic. There was no paralysis. By spinal puncture, 15 c.c. of very cloudy fluid were obtained. There was no evidence of reddish color. The cell count was 5,600. Leukocytes were present. There were no red cells. The globulin test was + + +. The differential count revealed polymorphonuclears 81 per cent., lymphocytes 19 per cent. Film stained by Gram stain revealed no organism. Culture remained sterile at forty-eight hours. Fifteen c.c. of serum were injected intraspinally.

August 27: The temperature was 100. The child was much better. There were stiffness of the neck and retraction. Kernig's sign was present, but less marked. There was no paralysis. The bowels were in better condition. The appetite was good. The cord was tapped and drained. Fifteen c.c. of clear fluid were obtained. The globulin test was +. The cell count was 580. No serum was injected.

August 29: The child was improved. The temperature was 99. The neck was slightly stiff.

August 31: The neck was slightly tender, but otherwise normal. The temperature was 98. There was no paralysis.

September 8: The general condition of the patient was good. He was up in a wheeled chair. There was slight weakness of the legs. When walking there was a slight give at the knees. Knee jerks were present.

September 15: The interossei and lumbricales of the right hand were paralyzed and there was slight clawlike contracture.

Comment.—The initial puncture in this case was made about eight hours after the onset of symptoms, and revealed 215 cells. The child was very ill. At twenty-six hours a second puncture was done, showing 150 cells. Fifteen c.c. of serum were given. Note the increase of cells to 5,600 following this procedure, and also the marked opisthotonos. After the second injection the cell count dropped to 580. This patient, as many others, became much more acutely ill following the intraspinal injection.

II. Serum Treatment

Obviously no general conclusions can be drawn from a study of the tables and the foregoing serum treated cases. Each instance must be considered separately. But in the study of these cases several interesting points appear. In the first place, further excellent examples of the various types described in the first section are presented, and certain unusual events, notably the delayed paralysis (Cases 17 and 22), and the pressure symptoms after treatment (Cases 12, 29, 32, 42, 43 and 25 A). Whether or not the serum played a part in delaying the paralyses in those cases is still an open question. Of somewhat similar nature, perhaps, is the observation that in the treated group there are rather more instances of partial paralyses and transient weakness than in the untreated group. The matter of pressure effect following intraspinal injection is most important and should be specially emphasized. In a number of cases undesirable symptoms followed treatment and seemed to be the result of it. Two main types of disturbance appeared, one presenting the aggravation of symptoms of meningitis common to all therapeutic intraspinal injections and to which reference has already been made above (Cases 42 and 43 are examples). The other undesirable reaction is much more alarming, and consists of respiratory embarrassment with general collapse. The breathing becomes rapid and shallow, and often irregular (Cases 12, 25 A, 29, 32 and 36). In most instances these symptoms rapidly disappear following the release of spinal fluid by lumbar puncture; and it was later learned that they could be avoided by using small quantities of serum (from 5 to 10 c.c.) and slow injection after removal of a larger amount of spinal fluid. It is conceivable that death may be hastened in cases in which serum is given in too large doses and too rapidly, after involvement of the centers of the respiratory muscles has begun. That these occasional instances of the undesirable effects of intraspinal injection occur in the treatment of meningitis also is well known; but in that disease, as in poliomyelitis, they are the exception. By withholding immune serum from the individual suffering with poliomyelitis, the patient may be exposed to a greater and far more frequent danger than that contained in the rather rare chance of intracranial pressure disturbances.

An analysis of the treated cases shows that four cases in which weakness or paralysis was already present when the first serum treatment was given are reported in this series to show that in these instances at least there was no restraining effect on the advancing process (Cases 1, 10, 20 and 21).

Another group which seems not to have been influenced by the serum consists of those cases with low cell counts (from 50 to 150 per cubic millimeter), and an isolated facial palsy. This is a very definite type of case, is always mild, and the facial weakness almost always clears up whether treated or not.

The remainder of the series is composed of cases which represent as nearly as possible average examples of this multiform disease. There are numerous instances in which serum was given and paralysis occurred, and numerous instances in which paralysis did not occur. The only thing which differentiates many of the cases is the clinical impression at the time of treatment, and this cannot be transmitted adequately in words.

One thing seems to stand out fairly clearly—the need for early introduction of the serum. Working from the hypothesis that the serum operates by neutralizing the virus which is free in the spinal fluid, and so intercepting it on its way to the nerve tissue, we attempted to give the serum as soon after penetration of the meninges had occurred as possible. But there may be an additional therapeutic value brought about through the penetration of the serum directly into the nerve tissue, as discussed by Mott,[3] Flexner[4] and others. In the dromedary type of case the moment of meningeal involvement is often marked with amazing sharpness, and if a child has been under constant and careful observation during the first hump, and intermission, it has been possible in several instances to treat within a few hours of the onset of meningeal stage, or second hump.

In cases of the straggling type unfortunately the greatest difficulty is often found in recognizing from clinical signs the moment when the invasion of the meninges occurs. If the serum is regularly withheld until this event takes place there may well be loss of valuable time, for in this disease time is an important factor after penetration of the meninges has been completed. Consequently every effort should be focused on the detection of meningeal involvement at the earliest possible moment. In some instances the baffling phenomena of greatly increased cell count without clinical signs of meningitis demonstrates the difficulty of the problem (Cases 11, 14, 20, 21, and 24). Occasionally in the absence of the spine sign (painful anterior flexion of the spine) or negative Kernig, a marked onset of drowsiness seems to have been the signal of meningeal invasion. In a few instances loss of one ankle or knee jerk has been the only indication of disturbance of the central nervous system. But these may not mark the beginning. With this difficulty in view, the question arises whether the use of serum is not perhaps indicated before signs of central nervous system involvement appear. The occurrence of multiple cases in a family is so common that this indication becomes stronger for the treatment of a child developing fever in a family in which one member is already stricken.

When we consider these recorded facts and impressions regarding the use of immune serum, including a recognition of the dangers attendant on all subarachnoid injections, small though they be, the question arises of the degree and advisability of resorting to the serum at all. This question must ultimately be decided both on statistical grounds and on clinical impressions and observations. As regards the former, the series of cases here reported is inconclusive. As regards the second consideration it should be stated that all the men working in our special field last summer came to feel that the serum possessed definite and often striking power to prevent paralysis. But the impression was also gained that the serum was of benefit in those cases in which it was given within thirty hours from the time of appearance of signs of meningeal invasion. That the serum is of far less value after the advent of paralysis would appear to be the fact. Yet even that point is one not easily decided, and what the limit of its value may be can be determined only from a far larger series of cases.

In this connection our observations should also be compared and correlated with those of Netter,[5] whose views on the value of the serum are somewhat more positive than ours. He is definitely of the opinion that cases treated after paralysis has appeared clear up with a speed and completeness that would be impossible without the use of serum. In the final analysis of his latest series of thirty-two cases he concludes finally that there are six cured absolutely, etc.

But on reading the protocols of the cases one does not feel the justification of the conclusions. For example, Case XXX of his series presents the typical picture of profound stupor and a facial paralysis. So many examples of this rather common variety of the disease have been noted in the past few years, and have been recognized to have an unusually good prognosis, that it is somewhat difficult to credit the serum unequivocally in this particular instance.

Obviously Netter finds himself in much the same position as we do. The statistical proof rather fails, but the clinical impression that serum is of great value is a strong note in his contribution.

The notion we have formed from this small and inconclusive series is that once the meningeal invasion is established, that is, from twenty-four to thirty-six hours after the onset of clear meningeal signs, the chances of arresting the progress of the disease in the central nervous system are already seriously diminished. All this merely means that the serum, if it be employed, should be used early, which in turn means prompt diagnosis through careful watching and the lumbar puncture findings. The evolution of the disease is rapid and its course must be considered in terms of hours, not of days. Consequently any child who develops febrile symptoms without adequate and obvious cause, and then promptly recovers, or straggles along half sick, should be watched for the ensuing week with greatest care lest the sudden appearance of a meningeal invasion, insidiously striking while the child is at play, or sleeping, take the family and physician unawares and valuable time be lost. But so long as other, surer and hence better methods of treatment are not available, it is doubtful whether in individual instances we are justified in withholding the serum even at a later stage of the disease than here considered as most promising. The problem is one to be weighed pro and con in the individual case, and will doubtless to some extent be decided by circumstances and predilection, and whether or not serum is readily available.

Remembering that it is human serum we are forced to use at present, the supply must always be limited. There must be a choice, too, as regards source—the medical history of the donor and the length of time since he suffered an attack of poliomyelitis. While it is true that neutralizing bodies may still be detected several years after recovery from the acute disease, yet analogy would suggest the advisability of choosing

3. Mott: The Olive Sharper Lectures, Lancet, London, 1910, **2**, 79.
4. Flexner, Simon: The Local Specific Therapy of Infections, THE JOURNAL A. M. A., Aug. 16, 1913, 447; The Local Specific Therapy of Infections, Nov. 22, 1913, p. 1872.
5. Netter, A.: Bull. de l'Acad. de med., 1915, **74**, 403.

persons more recently affected. Nëtter believes the most potent serum is found in individuals whose acute attack lies between three months and four years in the past. It is, of course, always possible that one specimen of serum is less active than another; hence pooling of the supplies should be practiced when collected, as they should be, in advance and in anticipation of the occurrence of cases of epidemic poliomyelitis.

ABDOMINAL HEMORRHAGE OF OVARIAN ORIGIN

WITH REPORT OF A CASE DUE TO RUPTURE OF A SMALL FOLLICULAR CYST *

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The first thought of every surgeon who, on opening the abdomen of a woman, finds it full of blood, is that a ruptured extra-uterine gestation has been the source of the bleeding. In the great majority of cases, this surmise proves to be correct. Although the condition of "hematocele retro-uterina" had been described by Nélaton as far back as 1850, it was not until 1873 that Gallard emphasized the importance of ectopic gestation in the causation of such hemorrhages. Previous to that time, pelvic hematocele had been explained as due to such causes as rupture of varicose veins in the broad ligament, reflux of menstrual blood through the fimbriated extremities of the tubes, coitus during menstruation, etc.

At the present time gynecologists are still, and quite properly, inclined to look on the existence of free bleeding in the pelvis, whether or not it extends into the abdominal cavity proper, as prima facie evidence of an ectopic gestation. A recent case, however, has impressed me with the fact that grave abdominal hemorrhage is not by any means "pathognomonic" of extra-uterine pregnancy, and that its source is not necessarily the wall of a tubal gestation sac. In the case under discussion, the hemorrhage had its source in a ruptured follicular cyst of the right ovary. Before discussing the general subject, it may be well to detail briefly the history of this case.

REPORT OF CASE

A. M., a white girl, aged 15, single, whom I was called to see at 8 p. m., Oct. 9, 1916, through the kindness of Dr. Arthur L. Tumbleson, had been taken quite suddenly at noon on that day with violent pain in the *right* iliac fossa, nausea and some vomiting. There was no pain in the left side. When seen by Dr. Tumbleson at 7 p. m. there was definite rigidity of the right rectus, the pain was still localized in the right iliac fossa, and the patient was pale and prostrated. The temperature was 99 F. and the pulse 120. My own examination, made an hour later, confirmed that made by Dr. Tumbleson. We both felt that we were dealing with a case of acute appendicitis. As a matter of fact, the only discrepant symptom was the patient's marked pallor, suggesting the possibility of internal hemorrhage, due perhaps to ectopic pregnancy. No support for this idea could be obtained either from the patient's history or from physical examination. Menstruation had commenced at the age of 14, and had been somewhat irregular during the first year, but had recurred regularly every four weeks since then. The last period had occurred, September 30, ten days previously, and had been normal in amount and duration. There was no history of any subjective symptoms of early pregnancy. Rectal examination showed the uterus to be small and anteflexed. Nothing definite could be made out in the sides of the pelvis.

The patient was transferred to Mercy Hospital for operation. Blood examination, made just before operation, revealed a leukocytosis of 20,000, with 90 per cent. polymorphonuclears. Hemoglobin was estimated at 45 per cent. The pulse had risen to 138, temperature to 100.2 F., and shock was pronounced. There was no air hunger.

The abdomen was opened by a right rectus incision. As soon as the peritoneum was reached, the bluish shimmer through it told at once that we were dealing with an intraperitoneal hemorrhage, and we naturally thought at once of ectopic pregnancy. When the peritoneum was incised, a large quantity of liquid blood escaped. As all the patient's pain had been in the right iliac fossa, the right tube was quickly brought up into the incision. To our surprise it was normal. The left tube, on the other hand, was found to contain, at about its middle, a small dark bluish nodule measuring only about 1 cm. in diameter. This I assumed to be a tubal gestation, although its surface was absolutely smooth, without any point of rupture. Furthermore, the remainder of the tube, both proximal and distal to the nodule, appeared normal. The fimbriated end was free and there was no sign of bleeding from it, as in a tubal abortion.

Since the patient's symptoms had pointed so definitely to trouble on the right side, the right adnexa were again quickly examined, in spite of the patient's rather alarming condition. The tube, as stated, was normal in every way. The right ovary, while perfectly free from adhesions, showed on its surface a mound of somewhat ovoid form, measuring 2.5 cm. in length, and extending over most of the length of the ovary. It was evidently a simple follicular cyst. At its summit was an irregular opening, apparently a point of rupture, to which was adherent a dark blood clot. The opening and the cavity to which it led were stuffed with clots. The walls of the cyst were thin, and there was no macroscopic suggestion of lutein tissue. Owing to the condition of the patient, it was considered inadvisable to resect the cyst-bearing portion of the ovary. Two deep figure-of-8 sutures of chromic catgut controlled the entire cyst cavity. The left ovary and also, I may add, the appendix, were quite normal.

At the close of the operation, the patient was markedly shocked, so that the advisability of a transfusion was considered. Response to saline rectal infusions and stimulants was so prompt, however, that it was not resorted to. Recovery was uneventful.

COMMENT

A search of the literature indicates the great rarity of this form of abdominal hemorrhage. In a complete survey made by von Beust[1] in 1914, records are given of thirty-six cases which had been collected from the literature up to that time. Since then, only three other cases have been reported, by Lipscomb, Dansey and Browne.[2] My own case would thus seem to be the fortieth on record, although there can be little doubt that many others have either been unrecognized or else not reported. I may add that the foregoing figures do not include the cases of hemorrhage resulting from ruptured ovarian pregnancy, or that which accompanies the occasional rupture of large ovarian cysts.

The point of special interest in my case, aside from the ruptured follicular cyst on the right side, was the existence of the tiny unruptured tubal pregnancy on the left side. Although I felt sure, for the reasons noted above, that the hemorrhage could not have come from this tube, it seemed wise to invoke the aid of the microscope in the settlement of this point. In view of the well known interest of Prof. Franklin P. Mall in

* From the Gynecological Department of Johns Hopkins University.

1. Von Beust: Lebensbedrohliche intraperitonealle Blutungen aus geplatzten Folliculär—und Lutein—Cysten des Ovariums, Inaug. Diss. Zurich, 1914.
2. Lipscomb, Dansey and Browne: Med. Jour. Australia, 1916, **2**, 57.

the subject of extra-uterine pregnancy, I submitted the specimen to him for study, with the request that he determine, if possible, whether the bleeding might by any chance have come from the tube. In his preliminary report he said:

> We find that the enlargement in the middle third is due to a distention by a blood mass embedded in which is a chorionic sac, its villi extending out irregularly into the blood clot. Within the chorion is a partially contracted amnion separated from the chorion wall by a gelatinous magma. There is no trace left of the embryo. It is evidently rather a long standing ectopic pregnancy which did not stop the menstrual periods. It would be interesting to question the patient further as to whether or not in the past there was a delay of menses. The clinical history of a hemorrhage in this case is an interesting one, and it seems very likely that the hemorrhage occurred from the ruptured cyst in the ovary. The clot in the left tube seems to be an old one and there was no evidence of recent bleeding.

It seems to me, therefore, that the evidence is quite complete that the hemorrhage had its origin in the ruptured cyst and not in the pregnant tube.

The Coexistence of Tubal Pregnancy.—The association with a tubal pregnancy on the opposite side must be looked on as a rather remarkable coincidence. I have been able to find no explanation for such an association. While a number of cases have been recorded in which ovarian hemorrhage occurred in connection with intra-uterine pregnancy, the case here recorded appears to be the only one in which it was noted in connection with an unruptured ectopic pregnancy.

In one other case, however, that of Hedde,[3] there was, in addition to a ruptured corpus luteum cyst of the left ovary, also a ruptured tubal pregnancy on the right side. The latter was almost surely responsible, in large measure at least, for the large amount of blood found in the abdominal cavity. Hedde refers to a case reported[4] in 1848 under the caption of "Rupture of Tube and Ovary, Followed by Internal Hemorrhage and Exitus." In this patient death occurred twenty hours after the onset of pain, with symptoms of internal hemorrhage. Necropsy revealed, in addition to a ruptured right tubal pregnancy, that the left ovary was enlarged to the size of a small apple, its interior filled with blood, and its surface showed a rupture "one third a thumb breadth" in size.

Theoretically, it might be thought that pregnancy, either normal or ectopic, might exert a predisposing influence on account of the associated hyperemia. In my case, however, the tubal pregnancy was very small, and possibly, as Professor Mall suggested, old and retrogressive. Further questioning of the patient after operation, I may add, failed to throw any additional light on this possibility.

Causes of Hemorrhage from the Ovary.—The causes of abdominal hemorrhage emanating from the ovary — what might be called perforative ovarian hemorrhage — are in large measure similar to those of ovarian hemorrhage of the nonperforative type, in which the hemorrhage is confined in the ovary, giving rise to hematomas of various sizes. The causes and types of hematoma of the ovary I have discussed in another paper.[5] The principal predisposing factors, as might be expected, are conditions which bring about hyperemia of the ovary, with engorgement of its vessels. This hyperemia may be of either the active or the passive type. Practically always, as my study of hematomas has shown, the bleeding occurs from the thecal vessels of structures derived from graafian follicles. Frequently it comes from the walls of atretic follicles, but even more often from the walls of corpora lutea or corpus luteum cysts. The occurrence of free bleeding from the ovary into the abdominal cavity would thus depend largely on the location of the follicular structure involved. If it lies near the surface, it can easily be understood that the thin wall may be broken through by the blood which escapes from the engorged blood vessels in its walls, and free abdominal hemorrhage thereby results.

The Rôle of Trauma in the Causation of Ovarian Hemorrhage.—In nine cases, according to von Beust, trauma was thought to play a rôle in the causation of the hemorrhage. Neumann's patient is said to have died immediately after washing clothes. In Lockyer's case the rupture occurred during a dance, in Patruban's as the result of a misstep, and in those of Rosenberger and Jones it was the result of intrapartum compression of the ovary. Finally, mention may be made of the case reported by Marshall, in which severe abdominal hemorrhage followed rupture of a small ovarian cyst by bimanual examination. This accident is, I am convinced, a not uncommon one, although it is not always recognized. There are probably few gynecologists of large experience who have not had personal experiences of this sort. It is extremely easy to rupture a thin-walled cyst by bimanual examination, especially under anesthesia. I recall distinctly the rather startling sensation produced in a recent case by the collapse between my fingers of a small thin-walled cyst of the ovary during examination under ether preliminary to laparotomy. When the abdomen was opened, the small, flattened cyst, which had been about the size of a walnut, was readily seen. Fortunately it had caused only a small amount of bleeding, less than a tablespoonful of blood being found in the pelvis.

Source of Bleeding.—In the case herein reported the bleeding came from an atretic follicle, constituting what we clinically designate as a follicular cyst. This I feel justified in saying even without microscopic examination, which, unfortunately, was not possible. The thin walls, without a yellow layer, are reasonably good proof that it was not a corpus luteum structure, which can usually be easily recognized with the naked eye. Nor was there the slightest ground for suspecting the existence of that rara avis, an ovarian pregnancy.

Of twenty-three cases in the literature in which the source of the bleeding is mentioned, a corpus luteum or corpus luteum cyst is given in eighteen cases, and a follicular cyst or atretic follicle in five, including the one here reported.

Degree of Hemorrhage.—The amount of blood escaping into the abdominal cavity varies between rather wide limits. In some cases it is quite small, being confined altogether to the small pelvis. This, for example, was the condition in the cases of Jayle and Neumann. In that of Armin Müller, also, it is stated that only 2 tablespoonfuls of blood were lost. In much the larger number of cases, however, the amount of abdominal hemorrhage was very large, and, in quite a number, cataclysmic. This is true of the case I have herein reported. The patients of Bürger and Cohn each lost 2 liters of blood, Sudeck's patient 1.5 liters; in Puech's fatal case the patient lost 3 pints of blood, and Scanzoni's patient, who also died, is

3. Hedde: Ueber Ovarialblutungen, Inaug. Diss., Freiburg, 1913.
4. Pollard: Lancet, London, 1848.
5. Novak, Emil: Bull. Johns Hopkins Hosp., to be published.

stated to have lost 6 pounds of blood. Other fatal cases are those reported by Trousseau and Valliset.[6]

Clinical Characteristics.—There is nothing characteristic in the symptomatology of ovarian hemorrhages, and hence they are rarely diagnosed until the abdomen is opened. In the milder cases one might expect that the occurrence of menstrual disorders would assist in the diagnosis. As a rule, however, menstruation does not seem to be much disturbed. Certainly there is nothing characteristic in the menstrual histories of the cases which have been reported. In both the mild cases and those of more acute type, it would be of great interest to determine whether or not the hemorrhage occurs by predilection at any one phase of the menstrual cycle, and especially whether or not it bears any relation to the period at which ovulation is believed by many to occur, that is, on about the tenth to the fourteenth day. Unfortunately, however, few of the authors who have reported cases make mention of the menstrual dates, and not a few give no menstrual history whatever.

In the acute or cataclysmic cases the onset is sudden. Pain is often violent and is located over the affected side, although it often spreads to other parts of the abdomen. Nausea and vomiting are common symptoms. In right sided hemorrhage, therefore, it is easy to understand why these cases have usually been diagnosed as acute appendicitis. Blood examination is likely to increase the deceptiveness of the picture, for moderate leukocytosis is the rule. If the internal hemorrhage is great, the characteristic anemia and perhaps air hunger may make one doubt the existence of a simple appendicitis. The pulse is accelerated to a degree depending on the amount of bleeding and the degree of accompanying shock. As in other forms of internal hemorrhage, the temperature may be subnormal, though this is not always the case. In at least eight of the reported cases, the diagnosis of acute appendicitis is stated to have been made.

Perhaps even more frequently, hemorrhage of ovarian origin is mistaken for extra-uterine pregnancy. Here again the sudden onset, with symptoms of grave internal hemorrhage, are the misleading elements in the picture. The diagnosis of ectopic gestation was made in nine of the reported cases.

These two examples will illustrate sufficiently the difficulty — one might almost say the impossibility — of diagnosing ovarian hemorrhage with any degree of precision. The possibility of its existence, however, should always be borne in mind in cases of supposed acute appendicitis in women, especially when there are also symptoms of internal hemorrhage. It is equally important, both before and after opening the abdomen, to know that frequently the clinical picture of ruptured ectopic pregnancy is closely mimicked by hemorrhage originating in the ovary.

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6. In addition to the references already given, the following will be found of interest:
Stein: Ueber Hemorrhagien der Ovarien bei schwerer Anämie, Inaug. Diss., Halle, 1898.
Engstrom: Arch. f. Gynäk., 1907, **132**, 60.
Oehmen: Monatschr. f. Geburtsh. u. Gynäk., 1913, **38**, 283.
Tate: Am. Jour. Obst., 1905, **51**, 653.

Degrees of Feeblemindedness.—The condition of feeblemindedness varies from the most profound degree, in which there is but a glimmer of intelligence, to that in which the defect is apparent only in the highest levels of mental activity, and which is not incompatible with the ability to acquire a large store of information nor to earn a living.—Treadway, *Public Health Report*, Nov. 24, 1916.

USE OF THYMOL IN TREATMENT OF HOOKWORM DISEASE *

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During an intensive campaign for the detection and treatment of hookworm disease in Trinidad, British West Indies, under the direction of the surgeon-general of the colony, experiments were conducted for determining the efficacy of thymol when administered in capsule form with varying proportions of lactose and with sodium bicarbonate. The routine method employed in the treatment of the disease was to give each patient two treatments (the drug being administered in every instance by a trained assistant), one week apart, and then make a microscopic examination, using the centrifuge, six days after the second treatment, of a specimen of the bowel excretion to determine whether or not a cure had been effected. In making the experiments the drug was administered in each case by the same assistants, in the same manner and the same doses, and to patients living under the same conditions.

TABLE 1. — EFFECTIVENESS OF PURE THYMOL, AND THYMOL WITH VARYING PROPORTIONS OF LACTOSE

District	No. of Patients	Drugs	Patients Cured by Two Treatments No.	Per Cent.
1.	325	Pure thymol	41	12.6
2.	1,112	Thymol and lactose, equal parts	546	49.1
3.	350	Thymol and lactose, unequal parts	76	21.7

For the purposes of the first experiment, three districts were selected; the persons found by microscopic examination to have hookworm disease were treated in the first district with pure thymol and in the second and third districts with mixtures of thymol and lactose. Among the 325 patients treated with pure thymol, finely powdered, only forty-one, or 12.6 per cent., were cured by two treatments. In the second district, the 1,112 patients were treated with finely powdered thymol mixed with equal parts of lactose, and 546, or 49.1 per cent., were cured with two treatments. The 350 patients of the third district were treated with a supply of thymol already mixed with lactose and placed in capsules by the manufacturer. This thymol was not as finely powdered as that used in the first two districts, and the capsules were made up of the following proportions of the two drugs: 10 grains of thymol to 2½ grains of lactose; 5 grains of thymol to 5 grains of lactose (but not finely powdered), and 2½ grains of thymol to 1 grain of lactose. In this district only seventy-six of the 350 patients, or 21.7 per cent., were cured by two treatments. On recompounding the mixtures and adding lactose sufficient to make the proportion of the drug equal to that of the thymol, the number of cures following two treatments again rose to nearly 50 per cent.

These results, as shown in Table 1, demonstrate that thymol is much more effective in the treatment of hookworm disease when it is finely pulverized and mixed with at least an equal amount of lactose.

In the routine treatment of cases of hookworm disease with the mixture of equal parts of thymol and lac-

* The experiments described in this paper were made during a campaign conducted by the International Health Board of the Rockefeller Foundation and the Government of Trinidad.

tose, it was found that more than 30 per cent. of the patients suffered unpleasant gastric symptoms after the administration of the treatment. In the great majority of instances these after-effects consisted merely of a burning sensation and slight gastric pain, though in a few cases they were more severe and were accompanied by nausea and vomiting. These mild cases of gastric disturbance were found to be relieved by having the patients take a small amount (from 30 to 40 grains) of sodium bicarbonate dissolved in a glass of water. Sodium bicarbonate was first used in this manner in the treatment of thirty-two average cases, the soda being given at the time the thymol was administered. The result was that the number of instances of noticeable gastric disturbance after medication was greatly reduced, being present in only four, or about 12 per cent., of the cases; and on reexamination after two treatments it was found that seventeen, or 53.1 per cent., of the patients were cured. This would seem to indicate that the sodium bicarbonate, in addition to preventing the gastric disturbances caused by the thymol, also makes the thymol more effective, since the average number of cures after two treatments with the mixture of thymol and lactose, in more than 5,000 cases, was about 48 per cent.

An equal part of sodium bicarbonate was then mixed with thymol and used in treating the patients in the

TABLE 2.—EFFECTIVENESS OF THYMOL-SODA AND THYMOL-LACTOSE

	Drugs			
	1. Thymol-Soda		2. Thymol-Lactose	
Persons cured by:	No.	%	No.	%
Two treatments	69	51	66	43
Four treatments	44	83	51	76
Six treatments	17	96	31	96
Seven treatments	6	100	6	100
Total	136		154	

first of two districts, while the usual mixture of lactose and thymol was employed in the second district. In the first district of 136 patients, sixty-nine, or 51 per cent., were cured by two treatments, and 113, or 83 per cent., by four treatments; while in the second district of 154 patients, sixty-six, or 43 per cent., were cured by two treatments, and 119, or 76 per cent., by four treatments. This shows a greater effectiveness on the part of the sodium bicarbonate mixture of 8 per cent. at the end of two treatments and of 7 per cent. at the end of four treatments.

In the first district, in which the thymol and sodium bicarbonate were used, the population was composed almost entirely of East Indian coolies and the percentage of infection was high, being 95.2 per cent. of the entire population. In the second district the percentage of infection was lower, being 82.5 per cent., while the population was made up of about equal numbers of negroes and East Indians. The degree of infection is usually more severe and the individual cases more difficult to cure in districts having high percentages of infection, the large proportion of infected persons and the absence of sanitary conditions in such districts always tending to produce a constant source of infection. Then, again, in districts composed of East Indians, because of their insanitary mode of living, there are always large numbers of heavily infected cases.

Table 2 gives in detail the results obtained in the two districts.

The experiments have hardly been extensive enough to justify a definite conclusion as to the relative merits of the sodium bicarbonate and the lactose mixtures, but so far as thymol mixtures are concerned, the experiments show the superiority of thymol and sodium bicarbonate in treating hookworm disease. Sodium bicarbonate is much less expensive than lactose, and its use means quite a saving in large intensive campaigns, such as are being conducted in many of the tropical countries.

AN EPIDEMIC RESULTING FROM THE CONTAMINATION OF ICE CREAM BY A TYPHOID CARRIER

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Twenty-nine persons attended a country school picnic at Helm, Calif., May 13, 1916. That evening, many of those in attendance were taken with nausea, vomiting and diarrhea, suggestive of an acute intestinal intoxication or infection. These symptoms were of about two days' duration; with two exceptions, however, all of those thus affected developed typhoid fever in about eight days. As acute intestinal disturbances often precede an epidemic of water-borne typhoid, it will be noted that this food-borne epidemic was similarly preceded by antetyphoidal acute intestinal symptoms.

The sick were members of ranchers' families living miles from the nearest physician. Every home in the small farming community had one or more inmates desperately ill with typhoid, and practically every rancher loaded his sick on farm wagons and carried the family to the nearest town. On the outskirts the families camped in a field, tents were erected, and the local medical men and nurses established an outdoor hospital for the sick, who were arriving daily from the deserted ranches. Twenty-three persons came down with the disease, and three of these died, a mortality of 13 per cent. One died as a result of intestinal perforation, and the remaining two from extreme intoxication. The blood of twenty patients was tested, and all gave positive Widal reactions.

At the request of the local health officers, the California State Board of Health, through the Bureau of Communicable Diseases, made an investigation to determine the source of the epidemic.

It was found that the school picnic was the only function attended by all those who were ill, and that the time elapsing between that event and the onset of the disease ranged from five to twelve days, giving an average incubation period of eight days.

The articles of food served were pickles, sandwiches of chicken and minced ham, homemade sausage, potato salad, mayonnaise dressing, muffins, cake and ice cream.

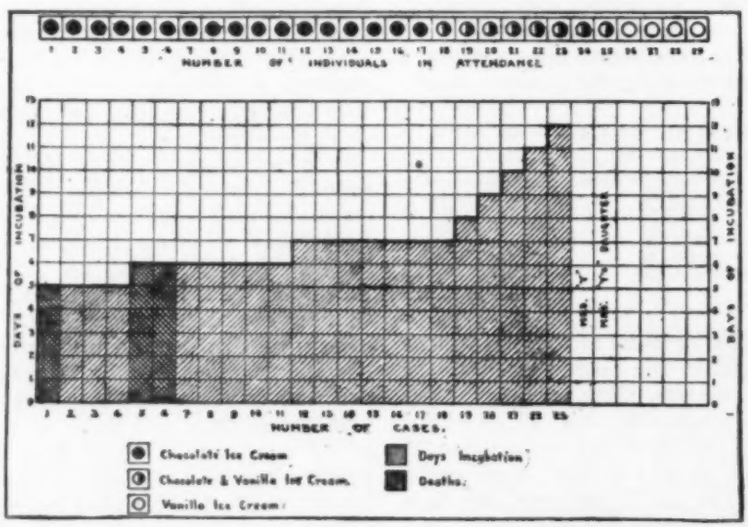
In tracing the source of the infection it was found that only one of these articles of food had been partaken of by all in attendance: the ice cream. Of this there had been two kinds, vanilla and chocolate. Chocolate had proved the more popular; four late comers found only three portions of this ice cream, and the fourth member had vanilla only. This boy did not become ill at all; on the other hand, every one who had eaten of the chocolate ice cream — even those eating nothing else — developed first the intestinal intoxication and subsequently typhoid fever. In fact, one unfortunate who ate four dishes was seriously ill from

the onset, and the case terminated fatally. There were two exceptions: although Mrs. Y., the maker of the chocolate ice cream, and her daughter ate the ice cream and suffered from the nausea, vomiting and diarrhea, they did not develop typhoid fever.

It became evident that the chocolate ice cream was the source of the infection, as:

1. Those not partaking of it did not become ill.
2. Those partaking of it, but of no other food, were taken ill.
3. Those eating chocolate ice cream were taken with acute intestinal symptoms indicating that the conditions under which it had been produced were favorable to bacterial multiplication.
4. Those eating the largest amount of chocolate ice cream were the most seriously ill, both with acute symptoms of intestinal intoxication and with typhoid fever, while those who ate but sparingly were only slightly ill.

From the accompanying chart it will be noted that twenty-nine persons attended the picnic; seventeen ate chocolate ice cream and eight had chocolate and vanilla, making a total of twenty-five who partook of the chocolate ice cream. Twenty-three of these developed typhoid fever, only Mrs. Y. and her daughter escaping infection. It will be noted that the majority of the incubation periods were of short duration, the average being eight days, and that the three fatal cases were of five and six day incubations.



Number in attendance, number of cases, incubation period and fatalities.

As the chart indicates, six ate a mixture of the chocolate and vanilla, and the same number show the longest incubation periods; on the other hand, eighteen ate chocolate only, and eighteen had comparatively short incubation periods, suggesting that the larger the portion of chocolate ice cream eaten the greater the infection, resulting in a shorter incubation.

Mrs. Y. prepared the chocolate ice cream. The cream was not obtained by mechanical separation and used immediately, but by skimming the milk of the preceding day. Ground chocolate was stirred into a mixture of milk, eggs and sugar. This combination, after being heated, then cooled, and added to the cream which had been whipped, was left in the freezer — without being iced — from 6:30 in the morning until 1 o'clock, when it was frozen. The method used in preparing this ice cream offered opportunity for contamination, and in addition the temperature was favorable for bacterial multiplication.

IDENTIFICATION OF THE CARRIER BY LABORATORY EXAMINATION

Specimens of stool were secured from all the members of Mrs. Y.'s family as well as all those in the family of Mrs. L., who made the vanilla ice cream. Of all the stools examined, the typhoid bacillus was isolated from but one specimen — that of Mrs. Y. Morphologically, culturally and serologically, this isolated strain was typical of the typhoid organism.

On questioning, the following typhoid history was elicited: Mrs. Y. had had typhoid fever seventeen years ago while living in Kansas. Of her immediate family, the son had typhoid fever, and the daughter, in whom there is no history of typhoid, was given antityphoid vaccine two years ago. During the last five years, six district school teachers had boarded at the home of Mrs. Y., who cooked for the household; while living here four of these teachers developed typhoid.

The blood of Mrs. Y. gave only a fair Widal reaction. In a dilution of 1:50 after an exposure of one hour, although there was clumping, there were numerous free organisms which were motile. As explanatory of this inconclusive Widal reaction it may be pointed out that this biologic phenomenon is brought about by a parenteral digestion of typhoid bacilli. As in typhoid carriers, the organisms grow practically outside the body, it is obvious that the Widal reaction would not be more evident in typhoid carriers, after a lapse of years, than in those who became free from the organism after recovery. It follows, therefore, that the reaction is not a reliable determining factor in the identification of typhoid carriers; in fact, even as an auxiliary means of identification, the Widal reaction seems of questionable value, as is also the absence of a typhoid history. The consideration of the Widal findings and the absence in two cases of a typhoid history in three California typhoid carriers support these views.

Mrs. Y. had typhoid seventeen years ago; her Widal was fair.

Mrs. X.,[1] in whom there is no history of typhoid, gave a negative reaction; on the other hand, Mrs. V.,[2] in whom there is no history of typhoid, gave a high power agglutinating serum.

Since the typhoid bacillus was isolated from the stool of Mrs. Y., six specimens of her stool have been examined at intervals of from three to six weeks. Typhoid organisms have been isolated from all specimens. Several of these have yielded on litmus-lactose-agar plates as high as 30 per cent. typhoid colonies, each subsequently being identified as typhoid both culturally and serologically.

Such specimens of stool are sent to the laboratory in a solution of 20 per cent. glycerin in physiologic sodium chlorid solution. An amount of stool not

1. Sawyer, W. A.: Ninety-Three Persons Infected by a Typhoid Carrier at a Public Dinner, THE JOURNAL A. M. A., Oct. 31, 1914, p. 1537.
2. Cumming, J. G.: Typhoid Epidemic at Maricopa and Taft, Month. Bull., California State Board of Health, September, 1916, p. 148.

larger than a split pea is added to a 25 c.c. container of the glycerin solution. The contents should then be thoroughly shaken so as to make a homogeneous suspension. If a large amount of the stool is added the glycerin does not accomplish the purpose for which it is used — that of inhibiting the overgrowth of colon bacilli.

In this laboratory the routine procedure for the identification of suspected typhoid specimens is: (1) to plate the specimens on litmus-lactose-agar; (2) to transfer all suspicious typhoid colonies to Russell's double sugar medium; (3) to transplant from all Russell tubes which give the characteristic surface growth and color changes to the various sugar broths, and (4) if the sugar reactions are characteristic for typhoid, to determine the final identification of the organism by the microscopic agglutination.

The California State Board of Health desires to keep in touch with all typhoid carriers, not only for the purpose of directing their daily pursuits along lines which will not endanger the public health, but also for the purpose of making investigations of the carrier problem. An agreement to the following effect, therefore, is entered into with all identified carriers resident in the state:

I have this day been informed that my excreta contain typhoid bacilli and that, unless unusual precautions are taken, persons will contract the infection from me. Realizing this danger I agree to observe the precautions stated below, and request that I be permitted to remain in free communication with other persons.

1. I will take no part in the preparation or handling of food which will be consumed by persons outside of my immediate family, and I will not participate in the management of a boarding house, restaurant, food store, or in any other occupation involving the preparation or handling of food.

2. I will not dispose of my excretions in a toilet to which flies have access without first exposing such excretions for thirty minutes to either a 5 per cent. dilution of liquor formaldehydi or 5 per cent. phenol (carbolic acid).

3. I will notify the local health officer of any cases of typhoid among the persons with whom I come in contact.

4. I will inform the local health officer of any contemplated change of residence so that he can notify the state board of health and obtain its approval.

5. I will submit specimens for examination when requested by the state board of health.

6. I will fill out the following report blank when submitted to me semiannually, and return the same to the California State Board of Health:

"I have, during the last six months, complied to the best of my knowledge with the five separate agreements entered into between myself and the California State Board of Health. Precautions involved in these separate agreements are for the purpose of preventing typhoid infection."

The typhoid history of Mrs. Y. demonstrates the inefficacy, from the standpoint of community health, of treating a case of typhoid without seeking the source of the infection. It is seventeen years since she herself had typhoid; there are many isolated cases of the disease reported among those with whom she came in contact; finally, this epidemic, traced indubitably to her, occurred. Had the first case, years ago, for which she may have been responsible, been traced to its source, the subsequent cases, the economic loss to the community, and the three deaths could have been avoided.

Heredity.—The qualities and achievements of nations are due less to governments than to grandmothers.—E. G. Conklin, *Yale Review.*

THE ISOLATION OF THE BACILLUS TYPHI-EXANTHEMATICI FROM THE BODY LOUSE*

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The rôle played by the body louse in the transmission of typhus fever was first demonstrated by Nicolle and his co-workers[1] in 1909, and independently and at about the same time by the American investigators, Anderson and Goldberger,[2] and Ricketts and Wilder.[3] Since then this has been thoroughly confirmed and definitely established. Although other insects have been investigated and have been proved free of the virus, it is still impossible to say at present whether or not the louse is the only carrier of the infection.

Working on this basis, a number of observers have reported what they regarded as the infectious element found in the louse. Ricketts and Wilder,[4] in 1910, stated that "polar staining organisms have been found occasionally in the feces and intestinal contents of 'normal lice,' whereas they are present almost constantly, and often in large numbers, in similar material from 'infected' lice." They describe the organism as a "short bacillus — hardly two micromillimeters in length [estimated] and their diameter at about one-third this figure. With Giemsa's stain polar bodies may be seen." Their morphology is "roughly of those which belong to the hemorrhagic septicemia group."

Later, in 1913, Hegler and von Prowazek[5] also found in a typhus-infected louse, in smear preparations stained by Giemsa's method, small structures of coccoid nature (also in "diploform"). No other details are given, but it is logical to assume that these observers saw the identical organisms first described by Ricketts and Wilder.

In 1914, Sergent, Foley and Vialatte[6] reported that in thousands of lice fed on healthy persons or non-typhus patients no organisms were found. But in typhus-infected lice, they noted small bacilli, from 1.2 to 2.5 microns in length and from 0.5 to 0.8 micron in breadth and whose ends stained more intensely (Giemsa's stain). They were coccoid in form, often paired, and sometimes in chains. They were more numerous in the bloody fluid of the digestive tract than in smears made from crushing the organs of the insect. In the early stages of typhus fever, the bacilli were less numerous but progressively increased in numbers with the course of the disease. The observation of these workers becomes of still greater importance when the fact is taken into consideration that they were able to produce typhus fever in monkeys by the injection of what they regarded as typhus-infected lice.

* From the Pathological Laboratory, Mount Sinai Hospital.
* Work done under the tenure of a George Blumenthal, Jr., fellowship in pathology.
* During the course of the work, one of the authors (Dr. Carlos E. Husk) became infected with typhus fever and died.

1. Nicolle, Comte and Conseil: Compt. rend. Acad. d. sc., 1909, **149**, 486.
2. Anderson and Goldberger: Collected Studies on Typhus, Bull. 86, Hyg. Lab., U. S. P. H. S., 1912.
3. Ricketts, H. T., and Wilder, R. M.: The Typhus Fever of Mexico (Tarbadillo), THE JOURNAL A. M. A., Feb. 5, 1910, p. 463; The Etiology of the Typhus Fever (Tarbadillo) of Mexico City, April 23, 1910, p. 1373.
4. Ricketts and Wilder: (Footnote 3, second reference).
5. Hegler and von Prowazek: Berl. klin. Wchnschr., 1913, **50**, 2035.
6. Sergent, Foley and Vialatte: Compt. rend. Soc. de biol., 1914, **77**, 101.

During the past year further confirmation of these findings was reported by da Rocha-Lima,[7] Töpfer,[8] Töpfer and Schüssler,[9] Otto,[10] and Baehr and Plotz.[11]

Töpfer and Schüssler observed that in 401 lice which had fed on thirty-five typhus patients bacteria were regularly seen. They were noted in lice which fed on the patient only during the course of the fever—in lice feeding on the patient after the defervescence, there were none to be found. Likewise none were found in 101 lice which had fed on nineteen patients with other diseases. In regard to these observations, it is important to note that these workers were also able to produce typhus fever in guinea-pigs by the injection of lice which harbored these bacteria. The reaction was identical with that induced by the injection of blood from a patient with typhus fever. The organism was found in the intestinal tract of the louse, but unfortunately these investigators were unable to cultivate it. This is due to the fact that the proper anaerobic methods were not utilized. They regard this bacterium as being identical with that described by Prowazek, da Rocha-Lima, and Sergent, Foley and Vialatte.

Töpfer, likewise, in an examination of 2,000 lice, found this bacterium only in typhus-infected lice, never in others. Otto quite recently has found these organisms in typhus-infected lice, in which they proliferate in the epithelial cells of the intestinal canal, thus confirming da Rocha-Lima. Although he is uncertain as to their exact nature, he maintains that the finding of these bacteria in a number of lice is adequate for a diagnosis of typhus fever. Plotz in his studies on typhus fever in the Balkans, and Baehr similarly in Russia, noted the appearance of these bacilli in infected body lice. Some were gram-negative; others were gram-positive. We shall discuss later the significance of this variation to the Gram stain.

An extensive study was made by da Rocha-Lima regarding the occurrence of these micro-organisms in the infected body lice. In his earlier communications, he is in doubt as to whether they are bacteria or protozoa. Although they have the form of bacteria, they take a reddish coloration with Giemsa's stain (usually taken by protozoa), and therefore he prefers to give them the noncommital name of *Rickettsia prowazeki*. In his last communication, he revises his earlier opinion and feels more certain of its bacterial nature and states that it is probably a bacillus. The name he suggests now is the *Bacillus prowazeki*.

A critical review of da Rocha-Lima's work brings out interesting and confirmatory facts relative to the typhus bacillus as the cause of typhus fever.

This investigator has found in a great number of typhus-infected lice the minute bacillary organisms with polar bodies which he believes are the same seen by Ricketts and Wilder, Prowazek, and Sergent, Foley and Vialatte. They were not found in 120 normal lice which were also studied in serial sections. These organisms he regards as of possible etiologic significance for the following reasons: First, the organisms penetrate the epithelial cells of the digestive tract of the louse, and by multiplying enormously produce marked characteristic changes in the cells. Such changes have been found exclusively in typhus lice. Second, only typhus blood possesses the ability to produce infection in the lice with these organisms. Many hundreds of lice fed on typhus convalescents, healthy individuals and persons suffering from other diseases were never similarly infected. Third, there is an absolute parallelism between the virulence of the lice (for guinea-pigs) and the presence of these organisms in the bodies of the lice.

Da Rocha-Lima, discussing the possible identity between his bacillus and the *Bacillus typhi-exanthematici*, states that "of all organisms that have been brought forth as the possible etiologic agent in typhus fever, the Plotz bacillus deserves the greatest consideration." The reasons for his opinion relevant to the dissimilarity between the two organisms, however, are: First, although they resemble each other, yet there are slight differences in morphology. He has been unable to grow the organism, and his comparison is made by means of a photograph of the typhus bacillus and of bacilli which were grown on artificial mediums for many months. The picture represents an old strain, and it is somewhat inaccurate in that the organisms appear much plumper and larger than those we are accustomed to see in young cultures. Again, old strains show such a degree of degeneration that exact morphologic comparison becomes impossible. Second, da Rocha-Lima states that his organism is gram-negative and the typhus bacillus is gram-positive. It has been previously reported[12] that the typhus bacillus may be gram-negative in the first subcultures of louse cultures or in smears made directly from typhus-infected lice (Baehr and Plotz[11]). These are the only points of differentiation which are offered by da Rocha-Lima. These differences, as we have shown, do not exist, and the organism described by this observer corresponds, in our opinion, to the *Bacillus typhi-exanthematici*.

Up to the time of the expedition (consisting of the authors) for the study of typhus fever in Mexico, all cultural work on lice proved fruitless, and the correlations of all of the foregoing investigations were based on purely morphologic data. One of the results of the Mexican expedition was the finding of the same organism in infected lice, growing it under anaerobic conditions and proving it to be the identical bacillus which Plotz reported as the etiologic agent in typhus fever, namely, the *Bacillus typhi-exanthematici*.[13]

The experiments on typhus-infected lice may be grouped into two classes: first, the production of typhus fever by the injection of infected lice; second, the isolation of the typhus bacillus from such lice. Some of the experiments are incomplete on account of the sudden termination of the work in Mexico, but from most of them definite conclusions may be drawn.

1. THE PRODUCTION OF TYPHUS FEVER IN GUINEA-PIGS BY THE INJECTION OF INFECTED LICE[14]

The production of typhus fever in monkeys by the injection, subcutaneously, or by the bites of typhus-infected body lice was accomplished by Anderson and Goldberger, Nicolle and his co-workers, Ricketts and

7. Da Rocha-Lima: Arch. f. Schiffs- u. Tropen-Hyg., 1916, **20**, 17; Berl. klin. Wchnschr., 1916, p. 778; München. med. Wchnschr., 1916, **63**, 1381; Deutsch. med. Wchnschr., 1916, **42**,, 1353.

8. Töpfer: Tr. Kongr. f. Inn. Med. Warsaw, 1916, p. 139; Berl. klin. Wchnschr., 1916, p. 323.

9. Töpfer and Schüssler: Deutsch. med. Wchnschr., 1916, **42**, 1157.

10. Otto: Med. Klin., 1916, **12**, 1143.

11. Baehr and Plotz: Jour. Infect. Dis., 1917, **20**, 201.

12. Olitsky, Denzer and Husk: Jour. Infect. Dis., 1916, **19**, 811. Baehr and Plotz: Jour. Infect. Dis., 1917, **20**, 201.

13. The literature of the investigations made by the German authors quoted above was inaccessible to us until about ten months after our own studies were made. Hence we regard their observations as more or less confirming our own reports.

14. These experiments, as well as those relating to the cultures of typhus-infected lice, are merely outlined here. Full details may be found in an article by the authors in the Journal of Infectious Diseases, 1916, **19**, 811.

Wilder, and others. The number of lice used by these observers varied from thirty-seven to over 100. Usually no fever or other manifestations of the disease were produced, except the development of an immunity to a subsequent inoculation of typhus fever virus.

Sergent, Foley and Vialatte and quite recently da Rocha-Lima have been able to produce typhus fever in guinea-pigs by the intraperitoneal injection of emulsions of typhus-infected lice. Furthermore, the former named workers first demonstrated the infectivity of nits from such lice for guinea-pigs.

In Mexico, it was our purpose to produce typhus fever in guinea-pigs by the intraperitoneal injection of infected lice so that the nature of the reaction could be studied bacteriologically.

For this purpose, lice which were feeding on typhus patients were collected in a Stender jar containing a piece of sterilized cheese-cloth. They were ground up in a sterile mortar with about 4 c.c. of saline solution until a homogeneous suspension resulted, and this was injected intraperitoneally into guinea-pigs.

One guinea-pig was injected with the emulsion of thirty lice taken from a patient in the thirteenth day of his illness, or one day before the crisis. On the ninth day after the injection the animal experienced a sudden drop in temperature followed by a rise to 104.4 F. Anderson, in an exhaustive study, determined that the incubation period of the typhus virus in guinea-pigs is in most cases from seven to ten days. This corresponds to our experience with over 500 animals with the disease (guinea-pigs and monkeys). This animal was then exsanguinated and its defibrinated blood injected into three other guinea-pigs, but unfortunately the work was then interrupted and the transmission of the virus could not be followed.[15] The necropsy on the original guinea-pig, however, showed the typical lesions of typhus fever in this animal. These were originally pointed out by Baehr, and have been since thoroughly confirmed: there is no obvious lesion in any structure except the spleen, which is enlarged and congested, with its malpighian bodies prominent.

The spleen of this animal was emulsified in saline solution and cultivated anaerobically. After five days, twelve colonies of the typhus bacillus appeared in one of the culture tubes.

Another guinea-pig was injected with sixty-five lice taken from a patient three days after the crisis of the disease. It has been determined that lice become infectious from four to five days from the time of their feeding on infected blood. These lice were therefore obviously infectious. At the end of ten days (corresponding to the incubation period of virulent typhus blood), the animal suddenly developed a rise of temperature of about 3 degrees. Although this animal could not be studied further, the presumption is great that it was developing typhus fever.

A guinea-pig injected similarly with the emulsion of forty lice removed from a person with a very mild case of endemic (New York) typhus fever showed no such reactions. In this case, cultures from the lice showed no growth of the typhus bacilli; in the other instances in which reactions were obtained, cultures from the lice in each case showed numerous colonies of the *Bacillus typhi-exanthematici*. At this point it may be stated that anaerobic cultures made with normal guinea-pig spleens in identically the same way as in the typhus lice-infected guinea-pigs showed no such organisms.

To conclude this phase of the work, we may state that the transmission of typhus fever to guinea-pigs by the injection of typhus-infected lice has been accomplished and the typhus bacillus has been recovered from the spleen of a reacting animal.

2. THE ISOLATION OF THE BACILLUS TYPHI-EXANTHEMATICI FROM TYPHUS-INFECTED BODY LICE

Having proved that the lice which were regarded as being typhus-infected were capable of producing typhus fever in guinea-pigs and that from such guinea-pigs the typhus bacillus could be recovered, the culture of typhus lice was undertaken.

Although it appears at first thought that such cultures would be hopelessly contaminated, yet this is far from being the case. This point is to be emphasized: When the intestinal contents of lice which were not virulent for guinea-pigs were cultivated, few contaminating organisms (mostly *Micrococcus albus*) and no typhus bacilli were obtained. When the intestinal contents of typhus-infected lice, which were virulent for guinea-pigs, were cultivated, often pure cultures of the typhus bacillus resulted.

Cultures were made in one of two ways: In one method, the insect was seized between two sterile forceps, one grasping the thorax and the other the lower end of the abdomen. When these forceps were pulled apart, the intestinal contents were liberated and were gathered in a loop and inoculated into the medium. This is the method of choice, since in noninfected lice the cultures often remain sterile, while in typhus-infected lice pure cultures of the typhus organism may be recovered. The other method was to macerate the lice to be cultured in a sterile mortar and inoculate the emulsion into the medium.

The medium used consisted of 0.5 or 2 per cent. glucose agar to which one-third the volume of rich ascitic fluid is added.[16] The medium and the inoculated material were thoroughly mixed by being poured from one tube into another, after which the tubes were allowed to solidify in the upright position, and when solid were covered over with fluid agar.

Our work in Mexico was unfortunately interrupted, but in the short time of our stay, we were able to observe six series of experiments on cultures with typhus-infected lice:

Series 1 comprised five lice taken from a patient on the twelfth day of his disease. After four days of incubation, numerous colonies of typhus bacilli appeared. All, however, were gram-negative.

Series 2 comprised three lice taken from the same patient one day later (or a day before the crisis). In this instance pains were taken to include the feces of the lice as they were passed on the sterilized cheese-cloth. After seven days' incubation the culture tubes were riddled with numerous pinpoint colonies of typhus bacilli. These were gram-negative, and remained gram-negative even in the first subculture.

Series 3 comprised two lice taken from the clothing of a patient on the twelfth day of illness. After eleven and twelve days' incubation, three and four colonies, respectively, appeared. Most of these organisms in the original colonies were gram-negative; a few gram-positive; in later subcultures they were all gram-positive.

15. The expedition was interrupted by the unsettled political conditions in Mexico, which necessitated the departure of the authors. As a result, this and other experiments could not be followed to their termination.

16. For the details in regard to the method of culture, the acidity of the medium, the kind of ascitic fluid necessary, etc., all of which are absolutely essential for a proper culture, the reader is referred to an article by Baehr and Plotz in the Journal of Infectious Diseases, 1917, **20**, 201.

Series 4 comprised six lice removed from a patient in the twelfth day of his illness. Three of these lice showed positive cultures: Louse 1 showed one colony of typhus bacilli after three days' incubation; Louse 2 showed eight colonies after similar incubation, and Louse 3 showed four colonies after nine days' incubation. The organisms in the case of Louse 1 were gram-positive; those of Louse 2 and Louse 3 gram-negative, most of the bacilli becoming gram-positive in the first and second subculture, respectively.

Series 5 comprised five lice taken from a patient at a period corresponding to one day before the crisis. At the same time a guinea-pig was injected with lice from the same patient. The guinea-pig showed evidences of having been infected with typhus fever; the culture showed growths of the typhus bacillus after four days' incubation. These organisms were gram-negative in the original colony.

Series 6 comprised four lice taken from a patient four days after the crisis. After six days' incubation, the culture showed one colony containing gram-negative organisms, another colony containing partly gram-positive organisms. After two subcultures these were definitely gram-positive.

Cultures from four of these series were studied in New York and were proved identical with endemic and epidemic strains of the typhus bacillus.

Thus six series of lice from five different patients were cultivated. The number of lice in each series varied from two to six. The period of the disease when the lice were removed varied from the twelfth day of illness to the fourth day after the crisis. From practically all these lice, the *Bacillus typhi-exanthematici* was isolated, sometimes in pure culture, in numbers varying from two colonies to an innumerable number of colonies. In all the experiments made, these lice were proved infectious.

In an additional series of lice removed from a person with a very mild case of endemic (New York) typhus fever, the culture was negative. The lice at the same time were injected into a guinea-pig without producing a reaction.

A loopful of the organisms from an original colony in one of the louse cultures was emulsified in physiologic sodium chlorid solution and injected intraperitoneally into a guinea-pig. Twenty-four hours later there was a considerable drop in temperature and on the third day the animal died. On necropsy, the typical lesions which are incident to typhus fever in this animal, namely, the enlarged spleen with its malpighian bodies prominent, and all the other viscera apparently normal, were found. The spleen of this guinea-pig was removed for culture. After four days' incubation, five typical colonies of the typhus bacillus appeared.

To summarize this phase of the work, we may state that we have been able to isolate the typhus bacillus from typhus-infected lice, and that in its earliest stage of growth such organisms are pathogenic for guinea-pigs.

THE VARIABILITY OF THE BACILLUS TYPHI-EXANTHEMATICI TO GRAM'S STAIN

It will be noted from the forgoing series of cultures of typhus-infected lice that these organisms are usually gram-negative in the original colonies but that on subculture they become definitely gram-positive. Pure gram-negative forms may persist from the original colony through two subcultures.[17] Independently da Rocha-Lima, as well as Plotz in the Balkans and Baehr in Russia, have observed in typhus-infected lice these organisms decolorized by Gram's method.

17. The gram-negative forms may be seen as well in an occasional very old culture, but in these instances the decolorization is due to degeneration forms.

In the routine examination of blood cultures taken on typhus patients, one is also impressed by the constancy with which one meets gram-negative organisms in the original colonies. Sometimes they may contain uniformly gram-negative, but more often they consist of partly gram-negative and partly gram-positive, organisms. In the blood culture studies recently made by Baehr and Plotz[11] in the Balkans and Russia, the occurrence in the original colonies of gram-negative forms was frequently noted. Our experience agreed with theirs, namely, we have noted that these gram-negative forms become gram-positive on subculture.

In comparing this variability to the Gram stain to that described in other organisms, we find that the literature offers several analogies.

It has been pointed out that the typhus bacillus in growing on glucose serum medium precipitates by the production of acids some constituents in the serum, the result of which is a clouding of the medium (the precipitation phenomenon of Libman[18]). A glucose serum agar medium is employed both in the original cultures and in the subcultures. Winslow[19] has found in regard to the *Coccaceae* that "there was a suggestive correlation between acid production and reaction to the Gram stain, the most actively fermenting forms being usually gram-positive."

The effect of the medium (or the environment of bacteria) on its reaction to Gram's stain is further noted in the case of the *Bacillus pyocyaneus*, which is gram-positive in the very youngest generation. Also Cedercrentz[20] noted that gram-negative bacilli after suspension in albumin became gram-positive. In regard to the poliomyelitis organism of Flexner and Noguchi, early cultures show pink forms, while in later cultures (especially if peptone is used in the medium), the "peptone and possibly other constituents of the bouillon render the micro-organisms somewhat larger as well as enable them to retain more firmly the Gram stain."[21]

These theoretical considerations are offered as suggestions for further investigations. However, one factor should be noted: the relationship between decolorization by Gram's method and the virulence of the organism. In the very early stages of growth the organism is often virulent—at these stages it is often gram-negative.

CONCLUSIONS

Since 1910, many observers in different parts of the world have reported the finding of an organism in typhus-infected lice. This organism they believe to have a causal relationship to typhus fever. Owing to the fact that improper methods have been used, culture of this organism was impossible. In Mexico, we have been able to grow this bacterium and to show that morphologically, culturally and serologically it is identical with the *Bacillus typhi-exanthematici*.

18. Libman: Zentralbl. f. Bakteriol., 1900, Part I, **28**, 293; Jour. Med. Research, 1901, **6**, 84.
19. Winslow and Winslow: The Systematic Relationships of the Coccaceae, New York, 1908, p. 95.
20. Cedercrentz: Arch. f. Dermat. u. Syph., 1908, **93**, 355.
21. Flexner and Noguchi: Jour. Exper. Med., 1913, **18**, 461.

Cost of Eye Injuries.—According to the findings made by the field secretary of the National Committee for the Prevention of Blindness after a survey of Minnesota, eye injuries cost the employers of the state nearly $50,000 a year and this does not include medical expenses or economic loss. The stone quarries of the state, especially those of St. Cloud, are criticized because of the failure of the managers to supply men with goggles or other protecting devices.

KÉRATODERMIE BLENNORRHAGIQUE

WITH A REPORT OF TWO CASES

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The first American case of this interesting disorder was reported by Simpson[1] in 1912. Since that time only two additional cases have been recorded in this country — one by Roark,[2] and the other by Haase.[3] In marked contrast to the seeming rarity of kératodermie blennorrhagique in America, several new cases have been reported in other parts of the world during the past five years. Among those who have described recent cases of this disease are Gougerot and Meaux Saint-Marc,[4] Swift,[5] Hodara,[6] Brault,[7] Haslund,[8] Jensen,[9] Selenew,[10] Sobotka,[11] Williams,[12] Lange,[13] Gibbs,[14] and Buschke and Michael.[15] Additional cases reported before 1912 should be credited to Rost,[16] Arning and Meyer Delius,[17] and Robin and Fiessinger.[18]

We shall limit ourselves to a discussion of kératodermie blennorrhagique, and not attempt to include the erythematous, urticarial, purpuric and other skin manifestations occurring in gonorrhea.

Buschke[19] states that he saw a typical instance of kératodermie blennorrhagique which occurred independently of a gonorrheal infection. His patient gave a history of gonorrhea seven years previously. There was some swelling of the right knee, owing to an increased amount of fluid. The skin over the knee was reddened and hot to the touch. Swelling and redness were present about the left internal malleolus. The left shoulder was the seat of pain on motion. A soft infiltrate was found in the urethra 14 cm. from the meatus urinarius. The prostate was enlarged and somewhat painful. The skin eruption was typical of kératodermie blennorrhagique, there being a profusion of large rupioid lesions as well as smaller horny papules on the scalp, back and limbs. In our opinion both the skin lesions and the arthritis in this case were probably due to an old gonorrheal focus, possibly in the prostate, as we do not believe that the disease occurs independently of such a focus in some part of the body.

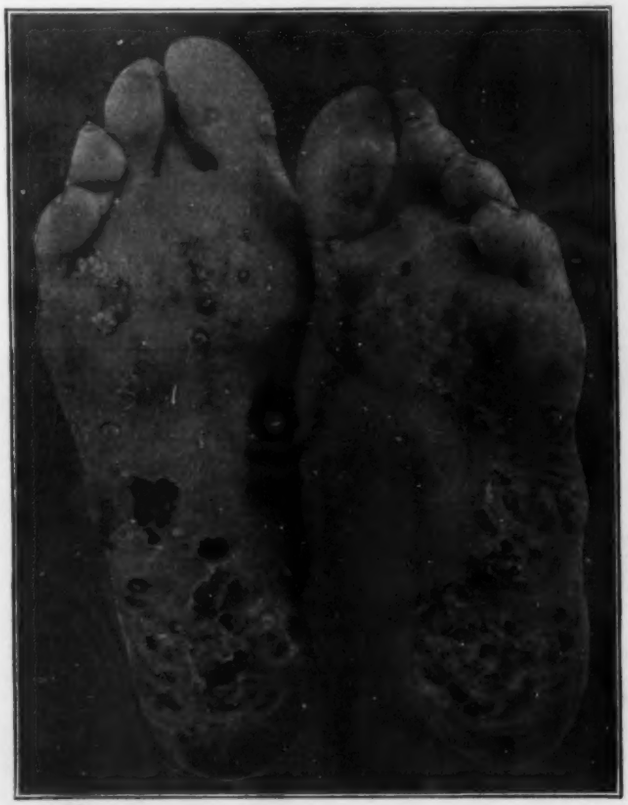


Fig. 1.—Lesions in Case 1.

The patient seen by Robin and Fiessinger[18] is of unusual interest in that he presented characteristic lesions on the hands, with but very slight involvement of the feet.

Gougerot and Meaux Saint-Marc's[4] patient was treated internally with hexamethylenamin in 0.75 gm. doses. Within fifteen days the eruption had almost entirely cleared up with this treatment alone.

Sobotka[11] has given a painstaking description of the lesions observed in his case, which was remarkable not only for the extensive joint involvement, but also for the generalized cutaneous manifestations. Only the upper arms, right forearm and the breasts were free from skin lesions.

REPORT OF CASES

CASE 1.—*History.*—A man, aged 25, American, clerk, entered Cook County Hospital, Oct. 1, 1913, complaining of painful urination and a urethral discharge of three days' duration, as well as stiffness of the phalangeal joints of both hands, the result of previous arthritis. He had suffered from four previous attacks of gonorrhea, the first one in 1906 lasting eight months. The second gonorrhea began in November, 1908, and continued for ten months. Gonorrheal arthritis, affecting both feet, set in three weeks after the onset of that attack and persisted for about eight months. The third gonorrheal urethritis appeared in 1911, and although of brief duration, was accompanied by "rheumatism," involving the lower legs and feet. In 1912 the patient had a fourth attack

1. Simpson, F. E.: Kératodermie Blennorrhagique, THE JOURNAL A. M. A., Aug. 24, 1912, pp. 607-612.
2. Roark: Blennorrhagic Keratosis, THE JOURNAL A. M. A., Dec. 7, 1912, pp. 2039-2040.
3. Haase: Keratosis Blennorrhagica, Jour. Cutan. Dis., 1916, **34**, 819-825.
4. Gougerot and Meaux Saint-Marc: Keratose blennorrhagique disséminée, guérison, Ann. d. mal. vén., 1912, **7**, No. 11.
5. Swift: Case of Keratodermia Blennorrhagica, Australasian Med. Gaz., Nov. 30, 1912.
6. Hodara: Ein Fall von Gono-Kokamie und generalisiertem gonorrhoischem Exanthem, Dermat. Wchnschr., 1912, **55**, 397-401.
7. Brault: Kératose blennorrhagique chez un indigène, Bull. Soc. franç. de dermat. et de syph., Feb. 6, 1913, p. 146.
8. Haslund: Et tilfaelde af generalisieret Gonokokinfektion med Keratoser, Ugesk. f. Læger, 1913, **75**, 325-330.
9. Jensen: Kutane Manifestationer ved Gonorre, Hospitalstidende, 1913, **6**, 534.
10. Selenew: Muskelatrophie, Muskel-rheumatismus, Arthritis, Keratosis der Fusssohlen bei einem gonorrhoischen patienten, Ztschr. f. Urol., 1913, **7**, 477-481.
11. Sobotka: Pustulos-hyperkeratotisches Exanthem bei gonorrhoischer Allgemeinerkrankung, Dermat. Wchnschr., 1913, **56**, 181.
12. Williams: Keratodermia Blennorrhagica, Brit. Med. Jour., 1914, **2**, 627-629.
13. Lange: Ein Fall von Hyperkeratosis gonorrhoica, Deutsch. med. Wchnschr., 1914, **40**, 495.
14. Gibbs: A Case of Keratodermia Blennorrhagica, Brit. Jour. Dermat., 1914, **26**, 433.
15. Buschke and Michael: Zur Kenntnis der Hyperkeratotischvesikulosen Exanthem bei Gonorrhoe, Arch. f. Dermat. u. Syph., 1914, **120**, 348-375.
16. Rost: Seltene Komplikationen der Gonorrhoe, hyperkeratotische Exantheme und universelle ankylosierende Arthritis, Dermat. Ztschr., 1911, **18**, 3.
17. Arning and Meyer Delius: Beitrag zur Klinik der gonorrhoischen Hyperkeratosen, Arch. f. Dermat. u. Syph., 1911, **108**, 56-72.
18. Robin and Fiessinger: Keratose blenorrhagique des mains, Bull. Soc. méd. d. hôp. de Paris, Feb. 17, 1911, p. 141.
19. Buschke: Ueber universell symmetrische entzündliche Hyperkeratosen auf uro-septischer und arthritischer Basis, Arch. f. Dermat. u. Syph., 1912, **113**, 223-239.

of gonorrhea. Seven days after its onset, gonorrheal arthritis appeared. It began in the hands and gradually spread until almost all of the joints were involved, lasting altogether about four months. Ten days after the onset of the arthritis, numerous pea-sized horny growths appeared on the

Fig. 2.—Lesions in Case 2.

soles and backs of both feet. At about this time a marked bilateral conjunctivitis developed. During his "rheumatic" attack the patient was in Bellevue Hospital, New York, but later went to Hot Springs, Ark., where he finally recovered.

The attack of gonorrhea for which he came under our care was his fifth. Examination of the patient showed him to be normal, save for a urethral discharge containing gonococci, slight flexion of the fingers of both hands, due to a former joint trouble, and a tendency to "chilblain" circulation. The three glass urine test showed the first two glasses to be cloudy.

Nine days after the admission of the patient to the Cook County Hospital, "rheumatism" appeared in both feet. Eight days later numerous pea-sized keratotic lesions appeared on the soles, the lower third of both legs, the backs of hands, the glans penis and the corona glandis.

The lesions were symmetrically distributed over the palms and backs of both hands, glans penis, anterior surfaces of lower third of both legs and on the soles. Two principal types were to be seen, and since they were most characteristic as found on the soles, we shall content ourselves with a description of the cutaneous manifestations as observed in those regions.

On the anterior portions of each sole were a few more or less discrete horny papules, in addition to a number of similar lesions which had fused to form small plaques. The individual papules averaged about 5 mm. in diameter. They were reddish brown, and each was surmounted by a closely adherent horny crust. A narrow reddish collar-like zone surrounded each lesion. When the horny cap was removed, the underlying surface was found to be pinkish and the site of a slight amount of infiltration. These lesions were much flatter than those on the rest of the body, rising only about 1 mm. above the surrounding skin. The flexor surfaces and lateral aspects of the toes were also affected by lesions of the cornlike variety. These were most numerous on the inner surfaces of the left great toe. The toe nails were thickened, especially those of the right fourth and left third toes.

The posterior portions of each sole were covered by lesions which differed markedly from those already observed. Most of them corresponded to the rupial type. They were larger and lacked the central elevation which was present in the horny papules. Their crusts were of the oyster-shell type, and darker than those of the other lesions. These rupioid lesions were so closely aggregated as to form a veritable horny plate, especially marked on the left sole, beginning near the inward curve of the plantar arch and being particularly accentuated over the heel. Some of these lesions attained a diameter of from 1 to 1.5 cm. Most of them were elevated peripherally, some even 0.5 cm., forming a sort of wall surrounding a central depression. The ensemble gave one the impression of a relief map on which a miniature mountain range had been depicted. Scattered among these larger lesions were a few of the cornlike papules to which we have already referred.

In addition, over the ball of the left foot were half a dozen dark reddish, circular, scaling macules, evidently the remains of former lesions.

Four days after admission to the hospital a severe bilateral conjunctivitis appeared. No pus was present, nor was the gonococcus found. Within one week the conjunctivae had again become normal.

Treatment.—The patient was treated with gonococcus vaccine, 50 million hypodermically every third day, under which his "rheumatism" improved. In addition to the vaccine treatment, the patient's gonorrhea was treated with injections of protargol, 0.5 per cent. three times daily, and later with potassium permanganate irrigations daily. Hexamethylenamin, 5 grains three times a day, and afterward potassium citrate, 15 grains thrice daily, were given. Oil of santal, 5 minims, was also given after meals, but soon discontinued

Fig. 3.—Lesions in Case 2.

because of nausea. "Calamine lotion" was applied to the feet daily. The conjunctivitis was treated with 20 per cent. argyrol solution. These details are mentioned because it has been suggested by certain writers that kératodermie blennorrhagique might be due to the treatment administered for gonorrhea, an idea that is abundantly disproved by a considera-

tion of all the evidence. The cutaneous manifestations improved rapidly while this treatment was being carried out, and in five weeks had almost entirely disappeared, leaving reddish scaling macules to mark the sites of the former lesions. The patient was discharged from the hospital, Jan. 5, 1914, much improved, but still complaining of stiffness in the joints which had been affected.

CASE 2.—*History.*—A man, aged 43, American, cook, who entered Cook County Hospital, May 31, 1916, had suffered from several previous attacks of gonorrhea, the first one

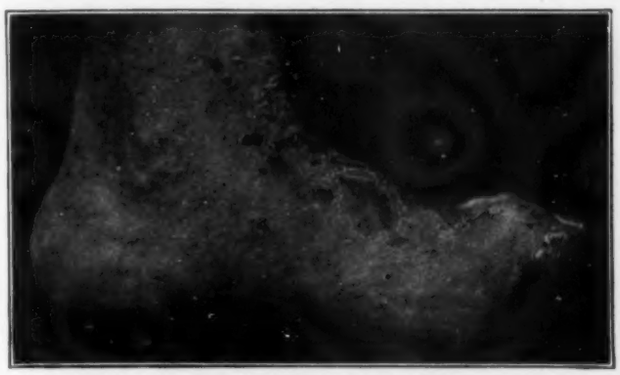


Fig. 4.—Lesions in Case 2.

beginning in July, 1896. About four weeks later, gonorrheal arthritis appeared. It affected both ankles and feet, as well as the right thumb, and lasted for about one year. The patient stated that he had also had gonorrhea in 1904 and 1908, but that the attacks were of comparatively short duration and unaccompanied by joint involvement. He also stated that he had contracted syphilis in 1898. His present illness began, May 14, 1916, with painful micturition and a purulent urethral discharge about one week after exposure. Two weeks later the right eye began to burn and itch, and became very red. Two days afterward the left eye was similarly affected. On examination both conjunctivae were found to be markedly injected. Considerable photophobia was present. A slight purulent discharge was also observed. Both corneas were clear, and the pupils were negative. Gonococci were found in a smear from the urethral discharge. The heart and lungs were normal, as were also the abdominal organs. The extremities were negative save for some pain and slight deformity, with stiffness about the feet, ankles and right thumb, which had been previously attacked by gonorrheal rheumatism.

Six days after the admission of the patient to the hospital, a papular eruption appeared on the backs of both feet, about the malleoli and on the soles. A few lesions were seen on the fingers, especially along the sides of both index fingers. Soon thereafter a few scattered lesions appeared on the upper abdomen, lower chest and left side of the trunk.

The head, face, back, arms, forearms and upper chest were free from skin lesions. Scattered over the lower chest, upper abdomen and left side of the trunk were about twelve lesions. They were well defined, circular, flat topped, and each was covered by a thin, dirty, grayish, adherent crust. This crust imparted a hornlike sensation to the finger when it was palpated. On its removal a smooth, slightly infiltrated, moist, reddish surface was exposed to view. When these crusts were more closely examined they proved to be moist, and hence were not due to a true hyperkeratosis, but rather to a deficient cornification or parakeratosis. No central umbilication or elevation was noted. Each lesion was entirely covered by its crust, the whole being a reddish brown. Several of these lesions on the trunk bore a marked resemblance to small rupial syphilids. They averaged from 3 to 5 mm. in diameter. The larger ones attained an elevation of 3 mm. above the surrounding skin, with which their sides formed acute angles.

Along the lateral aspects of the index fingers were a few lesions. They were smaller than those already described, measuring from 2 to 3 mm. in diameter. A surrounding reddish zone marked each one off sharply from the adjacent integument. Their tops were formed by small horny crusts. These lesions were elevated centrally, and are best described as acuminate. The palms were not thickened; neither was there involvement of the finger nails.

The genitals, buttocks, thighs and lower legs down to a short distance above the malleoli were free from lesions. Below that point numerous symmetrical lesions were present, especially over the right Achilles tendon, on the soles and backs of both feet, and on the superior and internal surfaces of the left great toe. The majority of these were horny papules. On the backs of both feet were a number of papules not exceeding 2 mm. in diameter. They were most numerous over the flexor tendons, especially about the metatarsophalangeal junctions. These lesions were brownish, hard and well defined. Each one was capped by a dry, horny crust, which adhered firmly to it. On the inner surface of the left great toe were a number of closely aggregated lesions appearing like a miniature mountain range. They were dark red, conelike, and about 3 mm. in diameter. Two of a similar sort were noted along the internal border of the same foot. Over both Achilles tendons, especially the right one, were a number of conelike lesions, some of which were centrally depressed. They had a tendency to linear arrangement in threes, which was unusual. As to size, they corresponded closely to those already described on the backs of the feet.

The most characteristic lesions were found on the soles, being more numerous on the left side. They were circular, reddish brown papules, each one covered with a closely adherent crust. Each lesion possessed a surrounding zone of inflammation about 2 mm. in width. These cornlike papules were about 3 to 4 mm. in diameter, and as regards form, bore a striking resemblance to upholstery tacks which

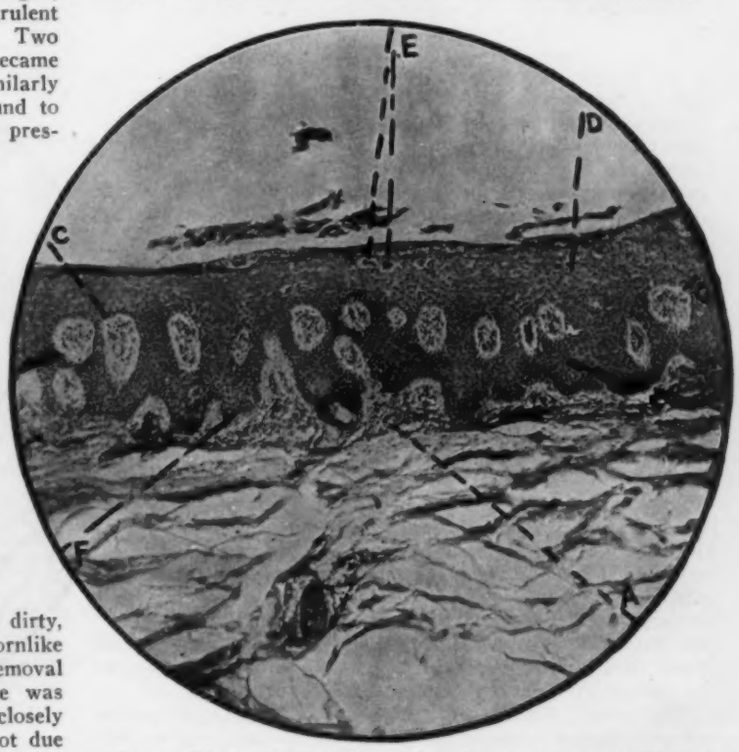


Fig. 5.—Microscopic appearance of lesion, × 60: *A*, infiltrate in papilla and subpapillary layer; *B*, thickened epidermis (acanthosis); *C*, edematous papillae; *D*, markedly edematous epidermis; *E*, pustules in epidermis; *F*, normal basal layer.

had been set into the skin. They showed only a slight tendency to grouping, and the hill and valley appearance was entirely lacking. A few were more yellowish and resembled drops of wax, to which Vidal compared them. Most of these

lesions were to be found on the anterior portions of the soles, especially about the region of the metatarsal bones. Thickening of the soles was not present in this case. The flexor surfaces of the toes were free. The toe nails were not affected.

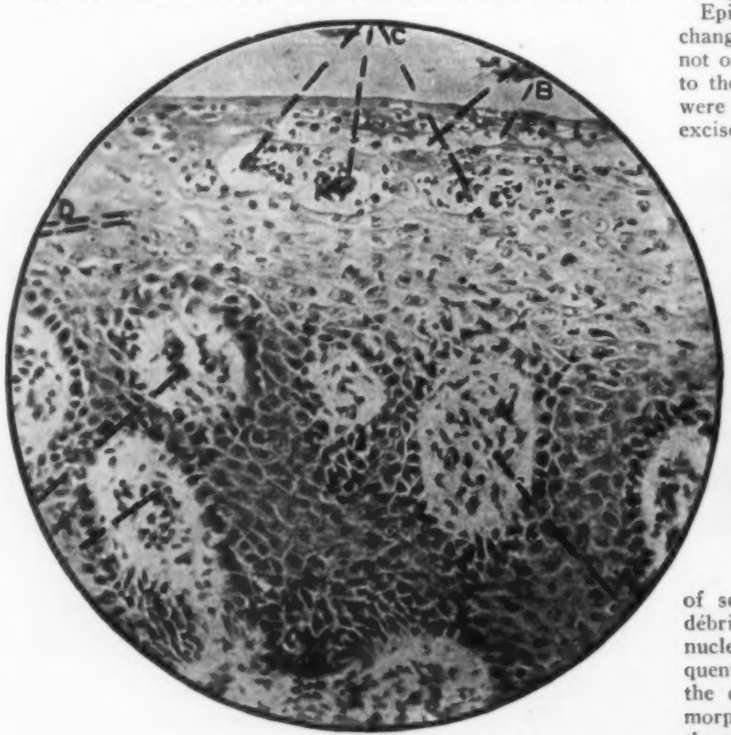


Fig. 6.—From same section, showing center of Figure 1, × 230: *A*, edematous papillae; *B*, vesicles; *C*, pustules; *D*, polymorphonuclear leukocytes in epidermis.

No lesions were present on the visible mucous membranes. All of the lesions in both cases began as small, brownish, cornlike crusts, feeling to the palpating finger much like small tacks embedded in the skin. No initial vesicular or pustular stage was noted clinically. The vesicles and pustules present were found only on microscopic examination. As the lesions disappeared, they left behind reddish macules which scaled slightly. No subjective symptoms were present, save a slight itching at times.

The patient lost considerable weight and strength during his stay in the hospital. In August he developed a mitral insufficiency accompanied by edema of the lower limbs and dyspnea. At that time his eyes were normal. Gonococci had not been found in the smears from the eyes. He developed an acute iritis, June 19, 1916. About that time the feet, ankles and right thumb became stiff and sensitive to pressure. The thumb took on the "radish-like" form which Fournier has described as occurring in gonorrheal rheumatism. In this case the eruption was treated with Lassar's paste. Four injections of typhoid vaccine were given intravenously with the hope of influencing the arthritis, some beneficial effect being apparently produced.

Aug. 31, 1916, the patient was discharged from the hospital. On that date his eyes were normal, but the arthritis and heart condition were still present, although not so marked as to confine him to bed.

Microscopic Report.—For microscopic study, several cutaneous lesions were removed from both patients. As the findings were practically identical, we shall limit ourselves to a description of the microscopic appearances seen in the second case.

Our biopsy included one large lesion and a smaller one as well from the external plantar surface of the right foot. They were typical lesions, each being covered by a cornlike cap. The fragment of skin was fixed in alcohol and embedded in paraffin. Most of the sections were stained with hematoxylin and eosin, although polychrome methylene blue and glycerin-ether mixture were employed in coloring a few. Satisfactory sections of the horny cap were not obtained, owing to its extreme brittleness.

Epidermis: This was the seat of the most characteristic changes. It was increased in thickness (acanthosis), owing not only to a proliferation of the prickle-cell layer, but also to the presence of marked edema in its upper portion. We were able to ascertain that the horny crusts which capped the excised lesions were due to a mixed hyperkeratosis and parakeratosis, the latter predominating. The so-called transitional layers were markedly affected, the upper layer or stratum lucidum being absent, and the lower layer (stratum granulosum) being present only here and there in a rudimentary form. The granular layer cells which remained kept their customary lozenge-like form, but each nucleus was situated in the midst of a clear space instead of being closely surrounded by the deeply staining keratohyaline granules. Besides the evidence of deficient cornification as shown by the presence of nuclei in the horny layer and the abnormal granular layer, we found numerous leukocytes in these locations. They were chiefly polymorphonuclear neutrophils. The presence of numerous tiny cavities in the upper portion of the prickle-cell layer also attracted the attention. Since they were surrounded by distorted and flattened cells, which show the results of spongiosis or edema of the epidermis, we knew them to be vesicles. Their contents consisted of serum and cells of several sorts—polymorphonuclears, lymphocytes and the débris of epidermal cells. Among these an occasional multinucleated cell called to mind the balloon cells so frequently found in the vesicles of herpes zoster. Certain of the cavities described above contained a number of polymorphonuclear leukocytes, and hence were pustules. Most of the pustules and vesicles were to be found in the upper portion of the epidermis just below the point at which the stratum granulosum is normally situated. The existing edema was intercellular and intracellular as well. Quite a few of the

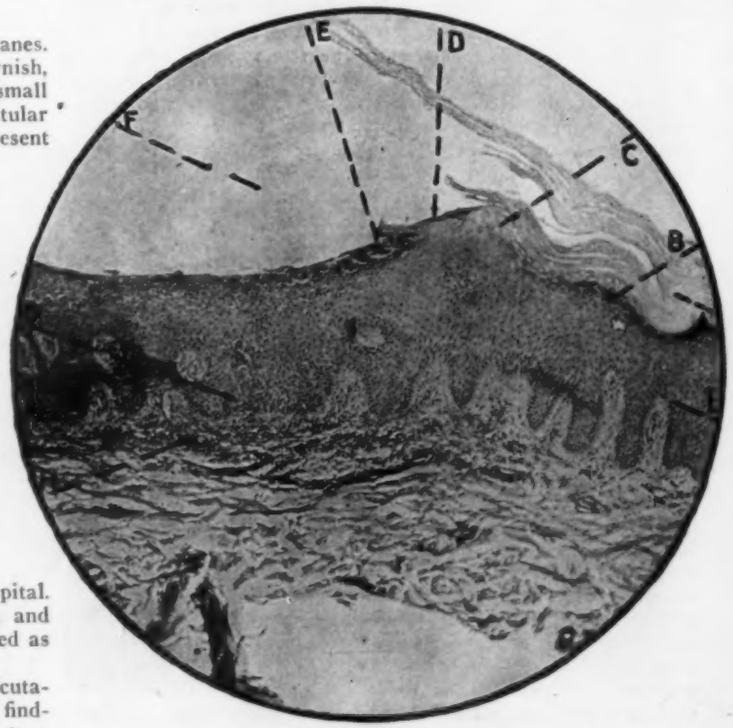


Fig. 7.—From same section, showing edge of Figure 5 with adjacent normal skin, × 60: *A*, thickened stratum corneum; *B*, normal granular layer; *C*, rudimentary granular layer; *D*, parakeratosis; *E*, pustules, and also many polymorphonuclear leukocytes in epidermis; *F*, space occupied by horny cap; *G*, thickened interpapillary process; *H*, round-cell infiltrate; *I*, normal epidermis.

prickle cells showed the latter form to a marked degree, some even suggesting the *alteration cavitaire* of Leloir. In some of the sections a large number of the cells were seen to have lost their prickles. Those adjacent to the stratum germinativum were more nearly normal. Throughout the entire section many leukocytes were found in the spaces between the epidermal cells. The germinal layer was only slightly affected, and as a rule offered its usual well defined wavy boundary between epidermis and derma. Occasionally it merged into the underlying inflammatory infiltrate. Here and there a marked edema of certain papillae flattened out the basal-layer cells; elsewhere their cylindric contour was retained.

Derma: The papillae were swollen and edematous. Their vessels were dilated and surrounded by an infiltrate composed of polymorphonuclear leukocytes, connective tissue and round cells. Only a few plasma cells could be found. Farther down, in the subpapillary layer, we found a denser infiltrate similar in its composition to that of the papillae. This infiltrate was not distinctly perivascular, but was more or less evenly distributed. Some of the sweat gland glomeruli were surrounded by a sheath of round cells. The collagen and elastin were replaced in spots by the infiltrate. Several large blood vessels, which were situated just above the subcutaneous tissue and evidently belonged to the subdermic plexus, showed a marked proliferation of their walls and a perivascular sheath of round cells.

Fig. 8.—From same section but showing another field, × 110: *A*, round-cell infiltrate; *B*, pustules; *C*, parakeratosis.

COMMENT

The most striking pathologic features of kératodermie blennorrhagique may be summarized as follows:

1. Marked edema resulting in vesiculation and later pustule formation.
2. Infiltration of leukocytes in both derma and epidermis.
3. Parakeratosis associated with hyperkeratosis, resulting in the formation of the horny cap on each lesion.

These findings agree in the main with those of Chauffard and Froin, Turnbull, Sobotka,[11] Buschke[19] and Baermann, all of whom have made extensive pathologic studies of cases of this unusual disorder. We would particularly emphasize the importance of vesicle and pustule formation, as well as the presence of parakeratosis in the horny cap.

With reference to the pathogenesis, it is interesting to note that in a patient with gonorrheal urethritis, Scholtz[20] found gonococci in subcutaneous abscesses which were associated with cutaneous lesions of urticarial and erythema nodosum type.

In a patient with acute gonorrhea who soon after its onset showed a generalized erythema-multiforme-like eruption, Hodara[6] found numerous gonococci in blood smears. He also was able to grow them, but could not find the organisms in excised cutaneous lesions.

20. Scholtz: Beiträge zur Biologie des Gonococcus, Arch. f. Dermat. u. Syph., 1899, **49**, 1.

Wadsack's[21] case is even more interesting as bearing on the pathogenesis. His patient was a man, aged 39, suffering a second time from gonorrhea. Five weeks after the onset, metastatic conjunctivitis and multiple arthritis appeared. Soon thereafter an eruption appeared which was much like a papular syphilid, but of a brighter color. It was most marked on the palms and soles, being also symmetrically present over the back and hypogastrium. The face, arms, legs and mouth were free. The lesions were linseed-sized papules. When the overlying scale was removed, a pinkish surface was exposed. Following their removal the scales were soon renewed. In one of these lesions gram-negative diplococci were found on microscopic examination. So far as we are aware, after a thorough review of the literature this is the only case of kératodermie blennorrhagique in which these organisms have been found.

In view of these findings it seems not improbable that the gonococcus itself may find its way to the skin through the circulation and thus act as the direct cause of the keratotic crusts characteristic of the disease.

59 East Madison Street
—32 North State Street.

21. Wadsack: Verhandl. d. Charité Gesellsch., May 10, 1906.

Puerperal Mortality.—According to a bulletin of the Children's Bureau, 15,000 mothers die each year in the United States from causes incident to maternity. This means that more women between 15 and 45 die from these causes than from any other except tuberculosis, though the deaths are largely preventable. While the death rates of such diseases as tuberculosis, typhoid fever, diphtheria, croup and certain other preventable diseases have fallen since 1900, the available figures for the registration area show no decrease in the number of deaths on account of childbirth. Two causes are assigned by the experts of the bureau for the present condition. One is that the hazards of childbirth have either been ignored or are accepted as unavoidable, and the second fundamental cause is the difficulty of securing adequate prenatal care and postpartum management. Even in the cities where there are many hospitals and qualified physicians, the proportion of women receiving hospital and qualified medical care in childbirth is small. In the rural districts physicians and hospitals are fewer or are harder to reach, and confinements frequently take place with no one present but the husband or neighboring women. Attention is called in the bulletin to the maternal and child welfare work as developed in New Zealand and in Canada, and a unit plan for a rural county in this country is suggested. This includes a rural nursing service centering at the county seat, with nurses trained to recognize dangerous symptoms in prospective mothers; an accessible county center of information about personal hygiene for such women; a cottage hospital, or beds in an accessible general hospital, and skilled attendance for each mother in the county.

New Instruments and Suggestions

THE USE OF RADIUM IN CANCER OF THE PROSTATE AND BLADDER

A PRESENTATION OF NEW INSTRUMENTS AND NEW METHODS OF USE *

HUGH HAMPTON YOUNG, M.D., BALTIMORE

In 1913, Pasteau and DeGrais reported a few cases of cancer of the prostate and bladder in which truly striking results had been obtained by the use of radium introduced into the urethra through an ordinary catheter (Fig. 1). This led me,

Fig. 1.—Catheter method of Pasteau and DeGrais for applying radium in cancer of bladder and prostate.

Fig. 2.—Author's cystoscopic rongeur for obtaining sections of vesical tumors for microscopic study.

in 1914, to procure some radium and to try it in certain selected cases. It soon became evident that for accurate work much more exact methods and special instruments would be necessary, and in the machine shop of the Brady Institute I set about to design and construct instruments to meet the varying needs in vesical and prostatic cancer.

The accompanying illustrations show the different models so well that little description is necessary. The small, straight cystoscope which is used in my cystoscopic rongeur (Fig. 2)

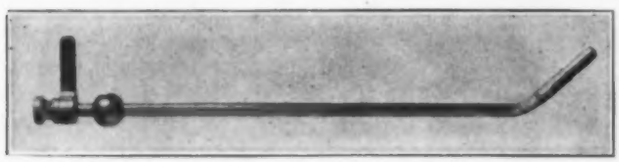


Fig. 3.—Author's Cystoscopic Radium Instrument 1 carrying a tube of radium in fenestrated platinum capsule in beak; closed with obturator.

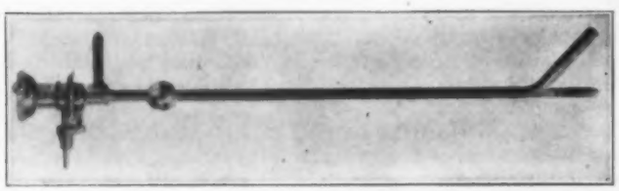


Fig. 4.—Instrument 1 with straight cystoscope introduced.

was used as a basis around which to construct the various radium instruments.

Radium Instrument 1 (Figs. 3 and 4) carries the radium in its beak. The slender glass tube containing the radium is enclosed in a platinum capsule which slips easily into the open tubular end of the beak of the instrument and is held there by friction. The instrument is passed through the urethra with an obturator (Fig. 3) which is then withdrawn, the bladder washed out and the cystoscope introduced (Fig. 4), making it possible to locate the region to be treated (Fig. 5 *a*)

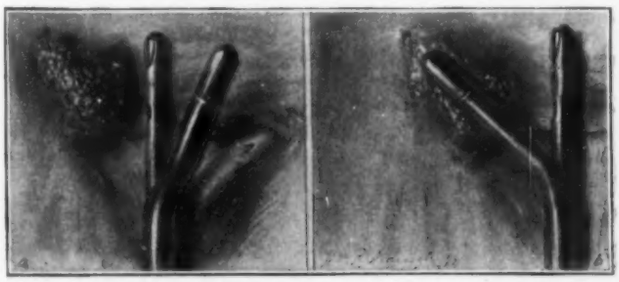


Fig. 5. (*a*) Observation of tumor through cystoscope. (*b*) Application of radium capsule against tumor.

and to apply the capsule containing radium directly on it (Fig. 5 *b*). When in the proper position the instrument is held fixed by the mechanical hand attached to the cystoscopic table shown in operation in Figure 6. This instrument and

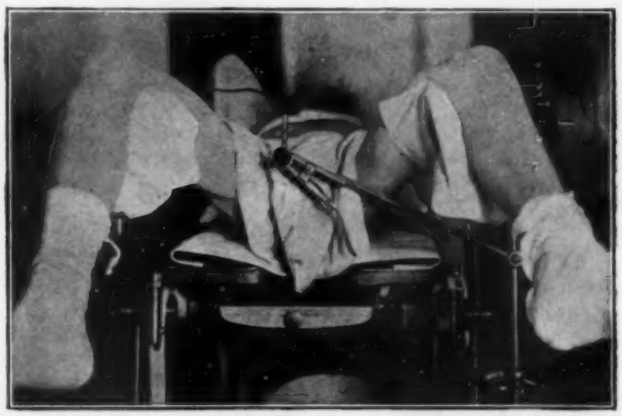


Fig. 6.—"Mechanical hand" or clamp holding radium instrument in position desired.

accurate methods of use were demonstrated to several medical societies in 1915.

Radium Instrument 1 has proved satisfactory for applications to the neck of the bladder, trigon and certain portions

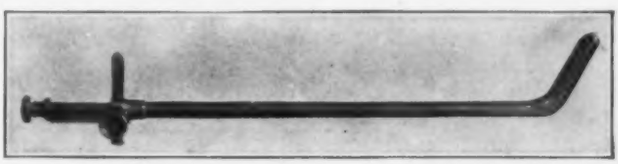


Fig. 7.—Author's Cystoscopic Radium Instrument 2 closed (radium in beak) with obturator.

Fig. 8.—Instrument 2 opened ready for use in bladder.

of the lateral and posterior walls. It is usually easy to see satisfactorily with the cystoscope and to place the radium directly on the lesion to be treated.

For tumors well out on the lateral walls of the bladder or on the upper part of the anterior wall this instrument is not

* From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital.

satisfactory, as the end and not the length of the radium tube is presented to the tumor. On this account another instrument was necessary, and to meet this need I have devised a second instrument.

As shown in Figure 7, Radium Instrument 2 carries the capsule of radium within the beak, which is made up of two hollow halves which, when separated by an external operating mechanism, carry the radium out to a position parallel to the shaft and about 2.5 cm. distant from it, as shown in Figure 8, in which it is in position to be placed against tumors quite remote from the middle of the bladder, as shown in Figure 9. This instrument has proved satisfactory in many such cases.

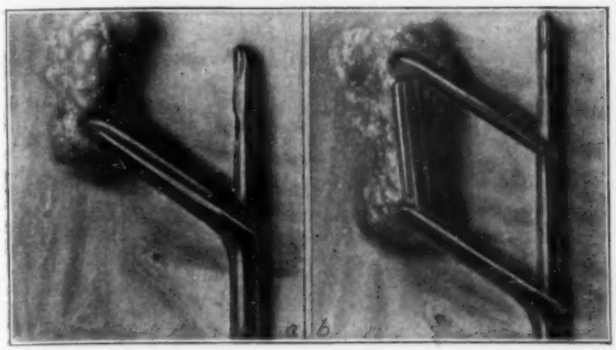


Fig. 9.—Instrument 2 in use: (*a*) inspection of tumor; (*b*) application of radium.

For tumors on the posterior wall of the bladder, still another instrument was desirable in order to place the radium broadside against them, as both instruments (1 and 2) here presented only the end of the radium tube to the posterior wall, and a third instrument was therefore designed, as shown in Figure 10.

As seen here, the beak carrying the radium revolves about its center (Fig. 11), being operated by two wires in the shaft and a screw outside. Figures 12 and 13 show the radium carried crosswise the shaft in position to be applied, under cystoscopic direction, to tumors on the posterior wall.

With these three instruments it is possible to place the radium flat (lengthwise) against a tumor in any part of the

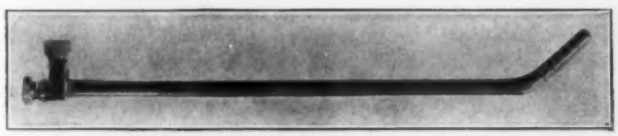


Fig. 10.—Author's Cystoscopic Radium Instrument 3 closed, with obturator.

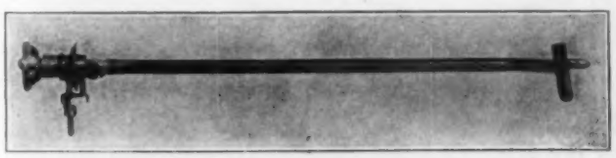


Fig. 11.—Instrument 3: beak with radium revolved for application to posterior wall.

bladder, and to inspect it through the cystoscope from time to time, during the application. A capsule with a fenestra along one side is usually employed in vesical tumors so that the radium may be placed unscreened directly against the neoplasm, but screened from the rest of the bladder. By this means we have been able to secure all the action of both beta and gamma rays, and at the same time have avoided burning the bladder in surrounding regions, thus making much longer treatments quite possible.

The duration and frequency of the treatments vary according to the case, the tolerance of the individual and the size of the tumor. The instrument is held in the desired position by the mechanical arm, described before, and the treatment continues an hour or more if possible. Intensive treatments are desirable, and in order to shorten the applications in sensitive cases several hundred milligrams of radium in a high

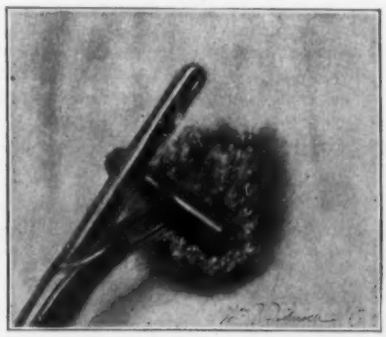


Fig. 12.—Instrument 3 in use against tumor on posterior wall of bladder.

percentage of purity are required to secure the best results. The treatments are made every two or three days, if possible, and a different site on the surface of the tumor attacked each time. We have seen many large tumors respond rapidly, but sometimes a few fulgurations may be helpful in causing

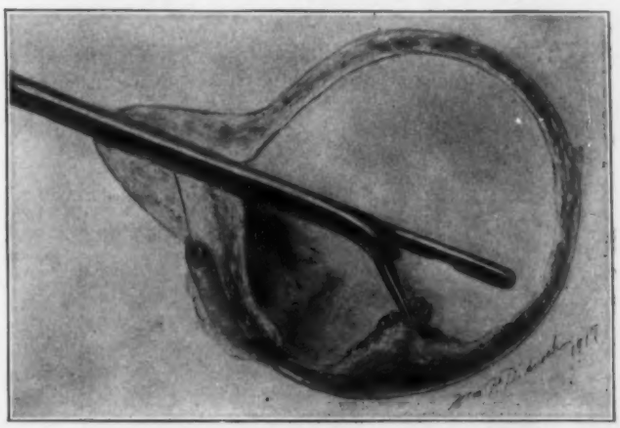


Fig. 13.—Sectional view, showing use of Instrument 3.

large tumor masses to slough away quickly, so that the base can be reached for direct radium applications (Fig. 14).

Later, with Dr. William Frontz, I shall report at length on the results obtobtained, some of which have been quite remarkable.

In cancer of the prostate, Instrument 1 (Fig. 3) has proved satisfactory, not only for intravesical but also for intra-

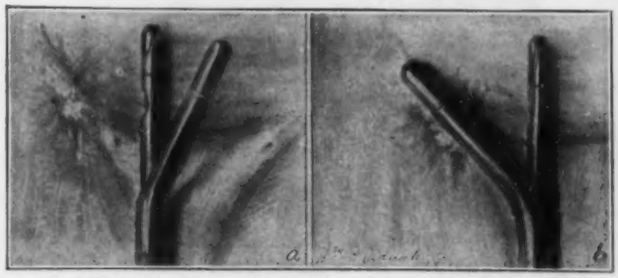


Fig. 14.—Application of radium to base of tumor destroyed by fulguration: (*a*) observation; (*b*) application.

urethral and rectal applications of radium. In the urethra and rectum the cystoscope is not necessary. I usually employ a nontubular instrument (Fig. 15); but a finger in the rectum tells definitely when the beak of the instrument carrying the

radium capsule is in the desired place, and the mechanical arm holds it there (Fig. 16).

In carrying out these treatments I make use of charts (Figs. 17, 18, 19, 20). As shown here, the size and extent of the cancers of the prostate, seminal vesicles and bladder are indicated in outline and the location of the treatments are given with the date and the number of milligram-hours affixed, thus showing everything graphically on one sheet. By this means the position of successive radium applications is varied from day to day so as to avoid overlapping and consequent burning, particularly when normal urethral or rectal mucosa intervenes between radium and tumor, as in cases of prostatic cancer.

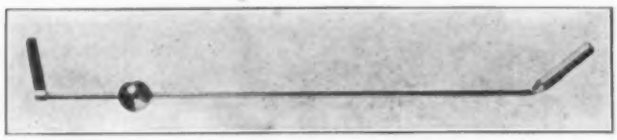


Fig. 15.—Rectal radium carrier, applied under direction of index finger in rectum, and held in place by mechanical hand or clamp.

By thus applying the radium at a different place each time it has been possible to accomplish as many as twenty-five transrectal treatments (each of one hour's duration) in cases of cancer of the prostate and seminal vesicles without producing any rectal burn or even marked irritation. Heretofore transrectal radium treatments of cancer of the prostate have been considered inapplicable on account of the vulnerability of the rectal mucosa. The methods here described make it possible to eliminate these complications, and greatly increase the ability for intensive treatment. With the instrument here described the radium (screened by a platinum capsule) can be applied, with the direction of a gloved finger in the rectum, accurately to almost any desired point of the carcinomatous prostate or seminal vesicles, and held there for an hour or more. Not infrequently a region above the seminal vesicle along the lateral wall of the pelvis and adjacent to the sacro-iliac synchondrosis is reached in order to pass well above the upper limits of the disease, as shown in Figure 20, and treat the lymphatics or glands of this region.

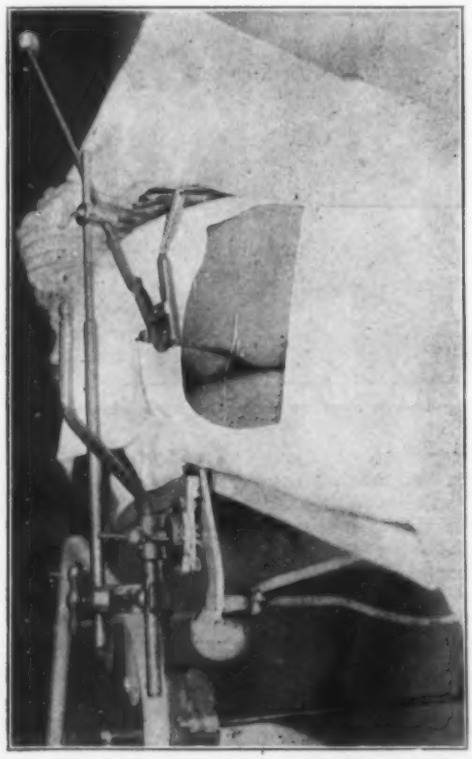


Fig. 16.—Mechanical hand in use in treating cancer of seminal vesicles and prostate through rectum.

The urethral and vesical mucosae have proved very tolerant to transurethral and transvesical treatments of cancer of the prostate and seminal vesicles. Not infrequently from 200 to 300 milligram-hours at one seance have been borne by the urethra or bladder without burn or evident irritation. The deep urethra affords three nonoverlapping positions for transurethral radiation, and each of these may be again used without fear in two weeks or more. Four or five transvesical positions are available for treatment of the seminal vesicle, and at the prostatic orifice the beak of the instrument may be turned in various directions against as many different enlarged lobes as may be present.

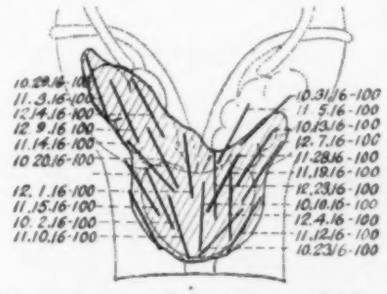


Fig. 17.—A case of cancer of the prostate and left seminal vesicle (right vesicle slightly involved). The radium treatments, each representing 100 milligram-hours, are shown, and the date of each is recorded.

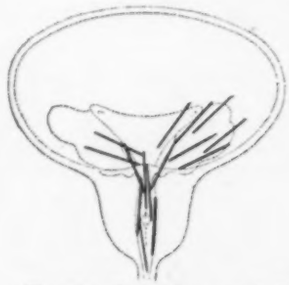


Fig. 18.—Chart of transvesical and transurethral treatments in case shown in Figure 17. Each line represents 100 milligram-hours.

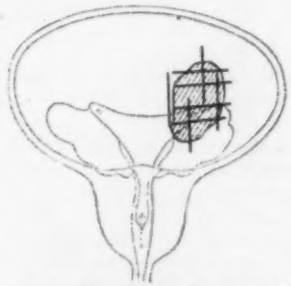


Fig. 19.—Chart of a case of tumor of bladder (involving left ureter) showing radium treatments given with Instruments 1 and 2.

I began this radium work timidly and cautiously, as I was fearful of injury caused by burns from short urethral or rectal treatments. The methods described above were evolved slowly, step by step, after we had demonstrated that by exact methods it was possible to place the radium where we willed and to change its location sufficiently often to avoid injury of normal intervening adjacent or remote structures. By these means far greater localized treatment, made directly

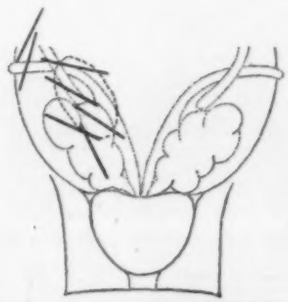


Fig. 20.—Chart of transrectal treatments in case of tumor of bladder (Figure 19). The higher applications are intended for possible glands along the pelvic wall.

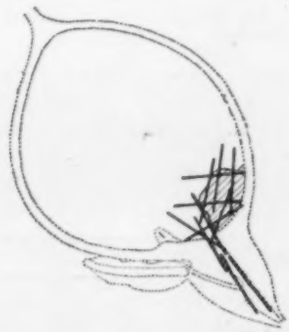


Fig. 21.—Chart of treatments given tumor of anterior wall of bladder near prostate.

on the neoplasm or through an insignificant layer of intervening mucous membrane, has become possible. I have also used radium in prostatic hypertrophy cases in which the patient was too desperately sick to be operated on.

This article is not intended to speak of ultimate results, but we may safely say here that truly astonishing results have been obtained in some cases: disappearance of obstruction, shrinkage and great softening of certain cancers of the prostate, and extensive retrogressive changes in inoperable cancers of the bladder. Fairly large amounts of radium, in high concentration, are desirable in order to make the treatments, amounting to 200 or more milligram-hours, of as short duration as possible. This is particularly true of cancers of the bladder, in which the patient is often intolerant of long treatments.

These methods have opened up a new and fertile field of therapeutics in a class of urologic cases which have heretofore been almost beyond relief. While we do not as yet know all the possibilities of cure, we do know that much relief can be afforded.

A CONVENIENT OIL DROPPER

LAURA LEONARD GILMAN, B.A., MADISON, WIS.
Assistant Bacteriologist, State Laboratory of Hygiene

A dropper for immersion oil, which will be found to be an asset in a busy laboratory, can be made easily and inexpensively from an ordinary rubber ear and ulcer syringe and a bit of glass tubing. The glass tubing, which should be just large enough to pass through the orifice of the syringe, should be bent as shown in the accompanying drawing, and should be long enough to reach almost to the bottom of the bulb. The bent delivery end is to be drawn out so that its lumen is large enough to admit only a fine platinum needle.

Convenient oil dropper.

This oil dropper puts accurate delivery of the oil and the size of the drop under the control of the user. It does not spill its contents when tipped over, nor does its exterior become covered with sticky oil drippings. It requires only one hand to operate. It delivers uniformly whether full or nearly empty, and if it is originally filled with good fresh oil, the lumen of the glass tube will not become caked with dried oil, even after months of service.

For those who use an oil immersion lens frequently, this device will save a great deal of inconvenience and delay.

A NEW INCISION FOR THE RADICAL RESECTION OF TUBERCULOUS GLANDS OF THE NECK

W. E. MCILVAINE, M.D., HAMMONTON, N. J.

I have termed this the "T incision." It consists of a horizontal portion and a vertical portion, as its name indicates.

The horizontal portion practically coincides with Dowd's upper incision. It is begun about 1 inch below the lobe of the ear and runs forward toward the median line of the neck parallel with the ramus of the inferior maxillary bone and in one of the furrows of the skin. This is represented in the illustration by the line *A-B*.

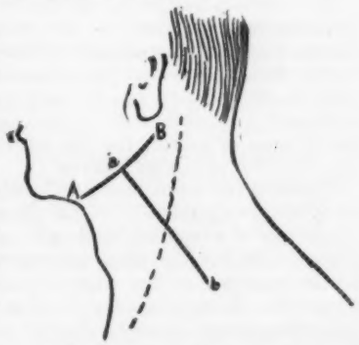
From the middle of this incision begins the vertical portion, which runs downward and slightly backward toward the junction of the middle and outer thirds of the clavicle, *a-b*.

This incision is particularly advantageous in extensive tuberculous or malignant disease of the cervical glands.

Through the horizontal portion may be removed the superficial collar of glands or any deeper glands in the submaxillary triangle. It may be extended backward to the hair line to facilitate the removal of the retro-auricular glands, or prolonged forward to remove the submental glands.

The vertical portion of the incision permits the excision of the substernomastoid chain of glands. It crosses the sternocleidomastoid muscle at about the middle, and both edges of the muscle can be easily freed and lifted out of the way. Through the lower end of the incision it is an easy matter to remove the supraclavicular glands.

If such an extensive excision as this were contemplated with the Dowd incisions, at least two separate incisions would be necessary, which would not offer so much freedom to the surgeon as would the incision just described. The anatomic incision does not give free access to the submaxillary triangle or the posterior triangle.



Incision for radical resection of tuberculous glands of the neck: *A-B*, horizontal segment of T incision, *a-b*, vertical segment; the broken line represents the anatomic incision.

I close this wound with plain catgut subcuticular stitches. It is drained for from twenty-four to thirty-six hours. The wound heals rapidly and leaves only a linear cicatrix. The upper horizontal segment is not conspicuous because it lies in a furrow of the skin. The lower vertical portion is covered by the collar.

408 Bellevue Avenue.

THE ANTIFORMIN SPUTUM CUP

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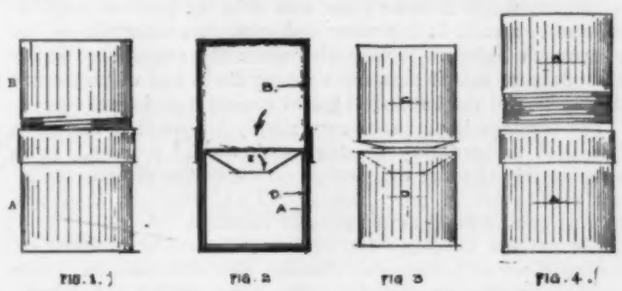
Chief Clinical Assistant, Newark Tuberculosis Bureau; Visiting Physician, Newark Tuberculosis Sanatorium at Verona, N. J.

All bacteriologists are familiar with the antiformin method of examination for tubercle bacilli. Antiformin is an alkaline antiseptic which dissolves the mucin and freezes the tubercle bacilli so that they can be sedimented.

For a more expeditious use of the antiformin process, I have devised a special sputum cup, which should prove of particular benefit to private laboratories and to general practitioners sufficiently interested in tuberculosis to desire to make their own examinations of suspected sputum. This cup and the antiformin solution are given to the patient with proper instructions how to admix the sputum with the antiformin. The essential principles operative are the insolubility of tubercle bacilli in the antiformin, and the filtering of the homogeneous mass through an exceedingly fine filter, on which as a residue the tubercle bacilli are found clumped together abundantly.

The cup consists of two metal receptacles, *A* and *B*, which may be screwed together tightly without any leakage of contents. The outward aspect of the cup is represented by Figure 1. Fitting snugly into the lower receptacle is a metal container, *D*, constructed on the same principle as that of an unspillable inkwell, made of tin and properly soldered, and in the upper receptacle is a similar container, *C*; this container is corked, and holds the antiformin solution. A fine



The antiformin sputum cup: Fig. 1, the sputum cup with the receptacles, containers and mixture as sent to the patient; Fig. 2, the action of the antiformin and filtrative; Fig. 3, the containers in the sputum cup; Fig. 4, the receptacles and the screw thread for adjustment.

metal filter, consisting of two circular pieces of finely meshed metal copper gauze between which is a layer of filter paper, fits snugly over the container, *D*, so that when the outer receptacles are screwed together the filter is firmly set.

The patient, according to instructions given him, inverts the sputum cup; takes out the antiformin container, *C*, and expectorates into the upper receptacle, *B*; when this is one-fourth full, he uncorks the container, *C*; pours its contents into the sputum; screws the cup together; throws away the container, *C*; inverts the cup, and sends it to the physician by parcel post, or retains the cup for twelve hours before bringing it to the physician's office.

Figure 2 represents the antiformin mixture passing downward into receptacle *D*. The antiformin dissolves the organic matter in the sputum and all other bacteria except the tubercle bacilli; the filter acts as a trap for the untouched bacilli enmeshed in the waxy insoluble material surrounding them; the shaking incident to the journey from patient to laboratory helps somewhat in the more rapid solution. The result is a residue on the filter which, when washed with sterile water to free it of antiformin, can at once be used as a smear, and stained with the usual Ziehl and Neelsen carbolfuchsin, which will reveal the presence or absence of tubercle bacilli.

The advantages of the antiformin sputum cup are the rapid application of the antiformin method and the expeditious determination of the nature of the suspected sputum. (When the specimen is received by the physician, the antiformin has already acted on the sputum for twelve hours or more). It obviates the necessity of recourse to any further time consuming investigation. The cup is compact in form, is easily sterilized by boiling, and the instructions to the patient can easily be followed out.

This cup has been of great practical use to me, and I hope it will meet the approval of all those who are devoted to this interesting field of medicine. I do not doubt that the cup can be materially improved.

145 South Orange Avenue.

PARAFFIN-COVERED BANDAGES*

TORALD SOLLMANN, M.D., CLEVELAND

The use of paraffined bandages has been suggested by Fisher.[1] He dips the bandage into melted paraffin, and applies this directly to the wound as a nonimpregnable dressing. In principle, this is somewhat analogous to the paraffin films, although it differs in some essential respects.

Another use of paraffin in connection with bandaging occurred to me while working with the paraffin films, as reported in a previous paper: the painting of the surface of the finished dressing in situ with melted paraffin. The results were very promising. The bandage is stiffened so as to form a support, which in some cases may take the place of a splint, or even of a cast. It is weaker and somewhat more pliable, but very much lighter. It may also serve the purpose of fixing a bandage so that it does not slide on itself, and of protecting the surface of the bandage against moisture and dirt.

The bandage is prepared very simply by painting the outer layers of the ordinary bandage with melted paraffin. It is also feasible to paint the surface of the cotton directly, without application of any bandage. This, however, does not give as good a mold as the paraffin bandage.

The paraffin bandages can of course be easily removed by cutting them with scissors. Paraffin may also take the place of adhesive plaster, etc., for sealing the end of a bandage. The melted paraffin is simply painted over the edge after the bandage is in place. Another use is for painting the edge of the bandage where it is especially liable to become frayed or soiled, as at the wrist. A strip of melted paraffin may also be painted along one side of the bandage to keep the laps from sliding on each other.

* From the Pharmacologic Laboratory of the Western Reserve University, School of Medicine.

1. Fisher, H. E.: Nonadhering Surgical Gauze, THE JOURNAL A. M. A., March 25, 1916, p. 939.

Therapeutics

DISTURBANCES OF THE KIDNEYS

(Continued from page 1043)

TREATMENT OF CHRONIC NEPHRITIS

The therapy of chronic nephritis really involves the control of the disease and the management of the patient suffering with it. The title presupposes that we are not discussing an accidental albuminuria with or without casts, a lordotic (orthostatic) albuminuria, localized nephritis, or a kidney disturbance arising from a so-called surgical lesion, the cause of which must be treated before the management of the nephritis can be considered.

When the case has been diagnosed as one of chronic nephritis, its character and the probable prevailing type of lesion should be ascertained. If the nephritis has resulted from an acute infection, if it has become chronic in a young person, and if, judging from the amount of albumin, casts and edema, it is apparently a parenchymatous form of inflammation, the prognosis is unfavorable. If there are eye lesions, the prognosis is still more serious. If there is severe anemia, severe indigestion, and signs of chronic myocarditis, the prognosis is unsatisfactory. If the nephritis has apparently developed on a cardiac lesion, the prognosis may not be unfavorable, but a considerable although slow improvement may be expected. If the amount of urine is large and of low specific gravity, if there is only a limited amount of edema, if the patient is elderly, and, from the general heart tone, one concludes that the prevailing pathologic condition in the kidneys is of the interstitial variety, there is reasonable hope for a temporary cessation, or a retardation in the progress of the disease. True Bright's disease is cardiovascular-renal disease, the prognosis of which depends on the efficiency of the heart and the condition of the blood vessels. From the condition of the patient may be surmised, but not positively diagnosed, whether this disease will eventually culminate in death resulting from uremia, angina pectoris, sudden cardiac dilatation, or rupture of a blood vessel in the brain.

All positive causes for the chronic nephritis must be investigated, the probable causes, if possible, removed, and anything in the patient's life or situation that would aggravate the condition should be changed. Physical strain, an injurious position of the body, accidental or maintained at work, a faulty bed, abdominal ptosis — everything which tends to interfere with the kidney circulation should be corrected. Chronic localized infections should be sought and removed, such as infections of the gallbladder, of a gum, of a tonsil or of a sinus connected with the upper air passages. It is possible that the urinary symptoms — whether albumin or casts — may be the remnants of an acute or subacute infection of the kidneys which has not yet cleared up; if this is probable, rest, careful diet and warmth, or a change of climate, may bring about entire recovery. Repeated tests of function will show the excretory ability of the kidneys, and may aid in establishing the cause of the nephritis.

All removable causes and irritants having been abolished, the treatment of chronic nephritis becomes (1) control of the diet, and (2) of the clothing; (3) care of the skin; (4) hydrotherapeutic measures; (5) exercise; (6) care of the bowels, and (7) necessary medication.

CONTROL OF THE DIET

1. Although the diet in nephritis has just been discussed, some repetition and elaboration is pardonable on account of its importance. It may be advisable in the form of chronic nephritis in which the parenchymatous apparently predominates to eliminate meat entirely from the diet, at least temporarily, and to reduce the protein intake to the least amount which will sustain strength and prevent anemia. Scientifically, repeated function tests, repeated study of the twenty-four hour urine excretion on a known diet, and the blood tests for nonprotein nitrogen will indicate the best diet for the patient. It should be such as will not cause gastro-intestinal indigestion. If meat is to be allowed, red meat may be eaten as well as white in small quantities once a day. It should be remembered that fish, chicken and fowl come under the heading of meat. All beef extracts, beef teas and meat soups should be prohibited. Rich nucleoproteins should be restricted, if not prohibited; this includes liver, sweetbreads, shad roe, etc. If the blood pressure is not high, the patient may be allowed coffee and tea. On his digestion depends the amount of starch he may have; also whether the milk he drinks shall be skimmed or not. If meat is not allowed, the patient should eat more eggs, beans, peas, oatmeal gruel, bread, nuts and cheese.

The amount of water taken must be regulated according to the edema and the patient's need of water. If the specific gravity of the urine is low, as occurs in interstitial nephritis, he requires plenty of water to eliminate the salts. If edema is extensive, the amount of water and salt used must be reduced.

A patient on a meat-free diet should receive a small amount of iron daily. If this salt-free diet is long continued, he will probably need a small amount of dilute hydrochloric acid, not more than 5 drops, two or three times a day, after meals, according to the character of his food — a pure starch meal would not require hydrochloric acid.

The patient should be frequently weighed, and the hemoglobin reading frequently taken. If he is losing weight and edema is not reduced, the food is not sufficient. If the hemoglobin index is diminishing and there is actual loss of red corpuscles, his protein is insufficient, and he is not receiving, or at least metabolizing, a sufficient amount of iron. If the albumin excretion is large, he may lose weight and become anemic in spite of a proper diet. Such a patient should rest for a time. An increase in weight does not necessarily mean that the patient is improving, as this may indicate an increase of edema, perhaps of the concealed or internal variety.

Great fatigue on the least exertion may be an evidence that the patient's food is insufficient, that his heart is failing, or that he is toxic. Analysis of the blood pressure and the character of the heart action will show whether the heart is at fault or whether the blood pressure is too high and is causing dyspnea and fatigue. The hydrotherapeutic measures, sweating procedures, physical exercise or purging may be too severe, and should be modified. A blood test may show that he is retaining nitrogen. Under any circumstances, such fatigue, especially if associated with muscle cramps and generally increased nervousness, should be carefully investigated. Uremia may be impending.

Game meat should be avoided; fish and shellfish should not be eaten unless strictly fresh. While cheese is one of the best protein nutriments for a meatless diet, in certain instances it causes indigestion and should be avoided. All spices and highly seasoned sauces and dressings, canned foods and asparagus should be prohibited. Potatoes, turnips, parsnips, carrots, peas, beans, string beans, spinach, cabbage, cauliflower, watercress and celery may be eaten. In a meatless diet the protein nutriment is obtained from eggs, bread, milk, oatmeal, peas, beans and perhaps cheese. Nuts, thoroughly comminuted and swallowed as milky pulp, may be freely eaten if not difficult to digest. The amount of cereal, bread and potatoes which will be of profit to the system depends on the weight of the patient. He should not be allowed to gain weight, and surplus weight should be reduced if possible. When an obese person suffers from chronic nephritis, the most careful arrangement of diet and exercise is necessary to reduce the weight, to sustain the circulation, and to cause the kidneys the least possible irritation. If the patient is not obese, it is desirable that a moderate amount of sugar should be allowed. Fruits should usually be included in the diet unless contraindicated by the activity of the bowels and by the causing of gas or hyperacidity. Vinegar and pickles are usually injurious; on the other hand, dilute hydrochloric acid may at times be needed to aid digestion, as indicated by gastric indigestion and a heavily coated tongue.

In radically changing the ordinary diet of the patient with chronic nephritis, care must be exercised not to place too great a task on the various organs of the body. Many a patient who is suffering from chronic nephritis will thrive much better on a modified mixed diet, including meat, than on a heavy starch and vegetable protein diet.

The state of the blood pressure indicates whether or not the drinking of coffee and tea may be allowed. If the systolic blood pressure is above 160, or the diastolic above 105, all caffein should be avoided; otherwise an ordinary amount of tea and coffee need not be prohibited. Alcohol should be prohibited entirely, unless the patient is well advanced in years and has been accustomed to it, when a small amount may do no special harm. When there is evidence of congestion or disturbance of the liver, or when there is much intestinal indigestion, alcohol should always be prohibited.

A man accustomed to tobacco may use it moderately, unless the blood pressure is excessively high. In a habitual smoker who has stopped smoking, an irregular heart may be steadied by a return to the moderate use of tobacco. When an immoderate use of tobacco is forbidden a high blood pressure patient, the circulation should be studied and the amount of tobacco allowed found to be moderate in his particular case. If he can give it up entirely without circulatory debility, or if it can be reduced in amount gradually to total abstinence, without weakening the heart, this should be done.

(To be continued)

Medicine and Mystery.—Medicine has cast off the veil of mystery which once covered her face and walks among men uncovered and unashamed. The days of "divine healers," Indian medicine fakers, and of Mrs. Winslow and Lydia Pinkham, are passing away. Some may say that these statements are contradicted by the wide prevalence of Christian Science, osteopathy and other cults. These are only the vagaries which have taken form in the delirium-racked brain of a fast dying superstition.—V. C. Vaughan, M.D., *Science*, Dec. 8, 1916.

Special Article

THE MEDICAL OFFICER OF THE ARMY

I

THE ADMINISTRATION OF THE MEDICAL DEPARTMENT*

The Medical Department of the Army is divided into the Medical Corps, the Medical Reserve Corps (after June 1, 1917, the Medical Officers Reserve Corps), Nurse Corps, Dental Corps, Veterinary Corps, and the enlisted men of the Hospital Corps.

MEDICAL CORPS

The Medical Corps consists of commissioned medical officers; in June, 1916, there were 443 officers in this corps; since that time 150 more have been added, making a total of 593. The new Defense Act (1916) provides for a total number of 1,550, making necessary approximately 1,000 additional men. There is therefore an urgent demand for men to fill these permanent positions. The need is particularly apparent when it is considered that in round numbers 100 medical officers are required for every division of 20,000 men for service with the division itself, and without allowing for any hospitals in the rear. The ratio of rank, that is, the relative number of officers in each grade in the Medical Corps, is: colonel, 3.16 per cent.; lieutenant colonel, 5.42 per cent.; major, 23.7 per cent.; captains and lieutenants, 67.72 per cent. In other words, of each 100 officers there shall be the indicated number in each grade. If 1,550 officers are created as by the new Defense Act mentioned, there will be about 49 colonels, 84 lieutenant colonels, 367 majors and 1,050 captains and lieutenants.

MEDICAL RESERVE CORPS

The Medical Reserve Corps was organized, April 23, 1908, to furnish temporary medical officers for service with the army in time of war. The number of these officers in June, 1916, was 1,767 on the inactive list and 146 on the active list. Because of the shortage in officers of the regular corps, a number of the Reserve Corps officers have been on permanent duty for some time. But even were the total number ordered into active duty it would not be nearly sufficient for the needs of the army in time of war. The Medical Reserve Corps consists of three grades: lieutenants, captains and majors. On entrance into the service in time of war, the officers retain the same grade that they held while on inactive duty. An officer assigned to active duty on arrival at his first station is subjected to a critical physical examination. Following this examination, the board recommends whether or not the officers shall be continued on active duty.

During the recent concentration on the Mexican border, many officers of the Reserve Corps were sent to serve with the troops. Their service, which extended from one to three months, was valuable and gave them much needed instruction. In time of war these officers can be counted on as thoroughly familiar with the basic principles underlying their work.

CONTRACT SURGEONS

Prior to the formation of the Reserve Corps, 1908, contract surgeons, who contracted with the government for their services at $150 per month, were assigned to duty in places in which there was an insufficient number of regular medical officers to accomplish the necessary work. This service was found unsatisfactory not only for the government but also for the individual physicians employed, as the contract surgeon has no rights from a military standpoint. He could not even require a salute from a private soldier.

DENTAL CORPS

The Dental Corps is of comparatively recent organization, March 3, 1911. In June, 1916, it consisted of forty regular dental surgeons and thirty-five acting dental surgeons. The corps was rather loosely organized at first, but at present is complete. The new Defense Act provides for the following grades: first lieutenant on entrance and after eight years with an examination, promotion to captaincy and after twenty-four years a majority. The law provides that there shall not be more than fifteen majors in the regular service. Of course if the army is increased, the number of dental surgeons will be correspondingly increased. The service has been greatly developed recently, and the dental surgeons have given excellent service not only in caring for the teeth of the soldiers but also in oral surgery and in the development of Roentgen-ray work in the study of infections of the alveolar processes.

NURSE CORPS

The Nurse Corps was organized in 1901 following the experience of the Spanish-American War. During that war, volunteer nurses were depended on to a great extent. They had not been satisfactorily examined, and the service was not wholly satisfactory. The Nurse Corps consists of a superintendent of nurses, chief nurses, nurses, and reserve nurses. At present there are 150 head nurses and nurses. Nurses enter the service after a mental and physical examination, and are appointed for a period of three years. At the end of that time they may be discharged or reappointed, depending on their service and their wishes. The pay of a nurse is $50 a month, with $5 extra a month in the second enlistment period and $10 extra a month in the third period. Chief nurses receive $30 more per month and the yearly increases. In addition to the pay, a nurse receives her food and quarters, and her uniforms are laundered at the government's expense. The enrolled nurses of the American National Red Cross Nursing Service constitute the reserve of the Army Nurse Corps. The service in military hospitals is similar to the service in civil hospitals as far as the work of the nurse goes. There are, however, minor differences. This was appreciated at the time of the recent concentration on the Mexican border, and a large number of Red Cross nurses were sent down to the border to receive their training in the medical department.

SANITARY TROOPS

The soldiers, or the sanitary troops, as they are called, are an important part of the department. They are employed for the care of the wounded and their transportation to dressing stations, field hospitals and other hospitals in the rear. The service in hospitals at the front is also in their hands. The strength of the sanitary troops was increased by the Defense Act, and is at present 5 per cent. of the enlisted strength of the army. There are now between 5,000 and 6,000 men in the corps. This means that 25,000 sanitary troops will be needed for an army of 500,000 men. The enlistments in the medical department have been

*A list of references to previous articles and books on military problems appears in this issue under Medical Mobilization and the War.

about as rapid as those in the line of the army. The grades in this branch are: private, $18 a month; corporal, $22 a month; sergeant, $36 a month; first class sergeant, $50 a month; hospital sergeant, $65 a month, and master hospital sergeant, $75 a month. The last two grades were added by the recent act of Congress. This pay is only a basis of calculation, for every soldier gets an increase of pay for every enlistment period. In addition he receives his food, clothing, quarters and medical service free of charge. For a soldier of the rank of first class sergeant or upward, quarters are provided for his family, and his family can purchase food from the hospital mess at cost. A number of officers in the line of the army have come from the enlisted strength of the medical department.

DUTIES OF THE MEDICAL OFFICERS

The duties of a medical officer from a professional standpoint are similar to the work of the professional man in civil life. Opportunity is allowed for the development of specialties, and every officer showing an aptitude in any particular branch of medicine receives prompt encouragement to develop it. In peace, this professional service is at different army posts or army general hospitals. Each military station has a large, well equipped hospital with facilities for the proper care of the sick and disabled. The service is similar to that of civil hospitals, including a surgical service, a medical service, an eye, ear, nose and throat department, and a well equipped laboratory. Instruments and other apparatus are furnished by the government. There is an up-to-date library at every hospital; recent medical literature is added as soon as published. This work, in time of war or in active field service, is of the same character except that the service is carried on with more difficulty when the improvisation of equipment, etc., is required.

SANITARY CONTROL

One of the most important duties of a medical officer in peace and in war is the careful control of the sanitary conditions of the garrison or camp. A medical officer acts only in an advisory capacity. When he finds sanitary defects on his inspection, he reports them to the commanding officer with recommendations as to how these defects can be remedied. The commanding officer then decides whether or not he will follow the advice of his sanitary inspector. As a rule this advice is promptly followed, for the commanding officer has also received instruction in sanitary matters and can intelligently judge whether or not the recommendation is a good one. Sanitary inspection work in time of peace is similar to the work of the health department of cities and towns of the country, with the exception that the recommendations of the sanitary officer are more often followed. In time of war or in active field service this work becomes of great importance. Preventive medicine receives the greatest attention, and every endeavor must be used to prevent the occurrence of disease among the troops. A word of warning, though, must be given. No carping criticisms of conditions in camp should be indulged in. Every recommendation should be weighed carefully and its relative importance considered before it is presented to the commander of the camp or garrison.

RECRUITING

In addition to these duties, the Medical Department also does the recruiting work for the army. There are a large number of line officers on this duty, but they act only as advertising agents to obtain candidates for the army. These candidates are sent to the different recruiting depots, New York, Columbus, Ohio, St. Louis, Denver, San Antonio, Texas, and San Francisco. On arrival at these recruiting depots the recruit is carefully examined by medical officers, and, if accepted, is sworn in by a medical officer. He is then placed in a recruit company at the depot and receives his preliminary training. It must be emphasized that this work is of prime importance. It is necessary that no defectives be allowed to enter the service. It is of much more importance to obtain a small number of men physically effective than a large number of men who are liable to spend much time in the hospital and receive a pension on their discharge from the service.

INSTRUCTION

At every garrison, classes are conducted for the instruction of line officers in the duties of their profession. This instruction also includes a course in personal and camp hygiene which is conducted by a medical officer detailed for the purpose. The medical department also instructs soldiers in personal hygiene and in the subject of venereal disease, not only from the moral but also from the physical standpoint. At the army service schools at Leavenworth, Kan., to which officers are sent to receive an education in the higher command, some of the classes are conducted by a medical officer of the army. Instruction is given in hygiene, sanitation and sanitary tactics. By the latter is meant the work of the removal and care of the wounded on battlefield. A field service school for medical officers exists to which medical officers of the rank of major are sent yearly for instruction. This instruction is in sanitary tactics almost exclusively. Medical officers are also on duty with the militia as sanitary inspector instructors. These officers not only inspect the sanitary units of the various states but also outline instruction required for both the medical officers and enlisted men.

DIVISION SURGEON

The army of the United States in time of war is organized into divisions of about 20,000 men. On the staff of the division commander is a medical officer of the rank of lieutenant colonel, who is the division surgeon. He has complete control of the work of the medical department in that division and is responsible to the division commander for the effective handling of his department. Under him is a sanitary inspector of the rank of lieutenant colonel, who not only makes sanitary inspections of the command but also inspects the personnel and equipment of the various sanitary units to see that they are thoroughly ready for service at all times.

SANITARY INSPECTOR

A new departure in sanitary inspection that may be mentioned here was recently inaugurated by the War Department. This division inspector may be authorized by the division commander to correct sanitary defects without reference to higher authority — in other words, when defects are noted, to see that they are corrected immediately without the delay incident to the so-called "red tape" of the service. This plan was worked during the concentration on the border, and was found very satisfactory. No friction was incurred, and the work was expedited greatly.

(To be continued)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

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SATURDAY, APRIL 21, 1917

OFFER YOUR SERVICES

We are printing this week forms of application for appointment in the Medical Corps of the Army, and also for appointment in the Medical Officers Reserve Corps of the Army. These are identical with the official blanks. This gives each physician the opportunity TO ACT AT ONCE. The first blank — that for appointment in the Medical Corps, U. S. Army — will be used by those who apply for appointment in the regular Medical Corps, that is, for permanent service. These men must be under thirty-two years of age, and must have had one year in a hospital. If one is careful, one can remove the blank wanted without mutilating it. When the blank is filled out it should be sent to "The Surgeon-General, U. S. Army, Washington, D. C."

THE EFFECTS OF HIGH EXPLOSIVES

The introduction of high explosives into modern warfare has opened a new field in military medicine. Shells varying from several pounds to a ton in weight, filled with high explosives, not only cause enormous fatalities, but also make mental and physical wrecks of some who survive. The explosion shatters the shell into fragments which are thrown at high speed in every direction; in addition, the blast or the concussion may kill even at a considerable distance without the individual being touched by either shell or débris. Soldiers may be thrown out of the trenches or hurled yards into the air simply by the concussion. They may be buried by earth or trench débris. When the injured are brought to the ambulance, or casualty clearing stations, they are frequently dazed or unconscious and lie for hours or days in a lethargy, and may have few or no marks of traumatism, apart from superficial bruises. They are suffering from "shell shock." Later various symptoms may develop. These may be headache, backache, vasomotor disturbances and vertigo; not infrequently there are amnesia, speech defects (mutism, aphonia, stammering, etc.), sensory disturbances (hyperesthesia and anesthesia) and diminution or loss of sight and hearing. The latter is an important result of shell concussion.

So many of the soldiers returned with permanently injured hearing, some totally deaf, that the Medical Research Committee of the British War Office concluded to have a careful investigation made of the subject. Dr. J. Gordon Wilson,[1] who has given considerable study to inner ear troubles and who has published several reports of his investigations, was requested to make a report on injuries to the ear due to high explosives. His studies were to include the etiology, pathology and treatment. Ample opportunity was given to him to investigate these cases, not only in England, but also in France, where he spent two months at the front in order to study the cases in the early stages.

Dr. Wilson objects to the term "shell shock deafness." He prefers the term "shell concussion deafness" or the phrase "deafness due to high explosives." This preliminary report is based on examination of over eighty cases of nerve deafness due to high explosives and as many more supposed cases of deafness wrongly presumed to be due to the same cause. The study was carried on at the West Cliff Military Hospital, England. Patients admitted as suffering from "nerve deafness due to shell concussion" were divided into three groups: 1. Those with nerve deafness, the term "nerve deafness" being used in its wide sense of interruption of the auditory path. 2. Those who had had nerve deafness of varying degree and who had still the fixed idea that they could not hear; to this group belong those patients who yield to suggestion or recover hearing rapidly, often completely, after excitement or intense stimulation. 3. Malingerers, some of whom undoubtedly had shell concussion which affected the hearing, but recovered; others were malingerers pure and simple.

The present report is concerned with Group 1, which Dr. Wilson divides into: (*a*) Cases of nerve deafness associated with damage to the conducting mechanism of the external ear. (*b*) Cases of nerve deafness without any visible or demonstrable lesion in the conducting mechanism when they come under observation; this does not preclude the occurrence of a demonstrable lesion following the concussion; in fact, the history of many of these cases shows that this did occur. (*c*) Cases of nerve deafness in which there has been destruction of the cochlea and of the semicircular canals or their nerves. In each of the first two groups the loss may be partial or total; the third always causes total loss.

The symptoms associated with loss of hearing from high explosives fall within that group of nerve diseases called "traumatic neuroses." In many cases there is a recognizable physical trauma in the head or elsewhere received during a period of mental excite-

1. Wilson, J. Gordon: Brit. Med. Jour., March 17, 1917, p. 353.

ment. The symptoms are varied and complex. There are present, Wilson says, exaggeration of tendon reflexes, tremors, vasomotor disturbances, sweatings, lethargy, sleeplessness and headache. There are unsteady equilibrium with vertigo, and a concentric narrowing of the field of vision. In many cases, fields of anesthesia are present. In two cases of total deafness there were complete anesthesia and loss of thermal sense. In one with total loss in one ear and great diminution in the other there were anesthesia on one half of the body and hyperesthesia on the other. Speaking generally, there are here included some symptoms which are frequently grouped under the term "hysteria" and others under the term "neurasthenia."

After giving the history of several cases selected more to show the variety rather than to emphasize the results, he discusses the hypothesis on which the treatment is based. The treatment, which is directed to stimulate the auditory pathway, on the whole is satisfactory.

Dr. Wilson's results may be briefly summarized as follows:

1. The normal stimulus (musical notes or the voice) is an adequate stimulus for the nerve and is the best stimulus. Electricity is contraindicated, and is liable to do harm since it easily produces vertigo.

2. Summation of stimuli plays an important part in the recovery of perception of sound. It is essential to differentiate vibrations from musical notes.

3. In shell concussion deafness there is diminution of perception and of duration of hearing along the whole series of forks, both through bone and through air. This diminution may be so great as totally to abolish perception of sound. It corresponds and exists *pari passu* with concentric limitation of the fields of vision. Often the two improve together. Frequently the field of vision is more retracted on the side having the greater deficiency of hearing.

4. If the conducting mechanism is damaged or destroyed, complete recovery cannot be expected. A trauma to the ear is frequently demonstrable.

5. The prognosis is good as a rule — at least for partial recovery.

6. As the deafness diminishes, there may persist for a long time an inability to grasp intelligently what is said or to retain the memory of it. A word may have to be repeated two or three times before the patient gets it; or if asked to repeat two or three numbers consecutively, he will repeat the last one; he knows there were others, but he did not get them.

The full explanation of the effects of high explosives on the central nervous system is not to be had at present. It is, however, just to recognize that these men have been injured in warfare and entitled to the honorable badge[2] which the wounded wear. It is easy to class these patients as hysterics or neurasthenics and pass on; but humanity demands more than this. "The thousands who suffer from these distressing symptoms deserve that medical science direct attention to their treatment. Rational treatment demands information; and rational treatment, not haphazard empiricism, ought to be given to those suffering from these distressing symptoms." [3]

2. Soldiers wounded by the enemy wear a short, narrow strip of gold braid on the sleeve.

3. Wilson, J. Gordon: Brit. Med. Jour., March 17, 1917, p. 355.

THE DUTY OF THE ORGANIZED MEDICAL PROFESSION

THE JOURNAL desires to emphasize again that the organized profession can easily assume the burden — it should not be called a burden, however — of supplying the Army and the Navy with a sufficient number of medical officers even for a force of 2,000,000 men, if such a force should be mobilized. But to do this it will be necessary for the state and county societies to realize their obligation in the matter. Every county society, no matter how small, should call its members together to discuss the subject. This ought to be done very soon. If it is done in the right way, it will make it possible to present to the Surgeons-General of the Army and of the Navy a list of available men, with all the necessary data regarding each. In the smaller counties where there is a limited number of physicians, it should be mutually determined how many men can be spared without too greatly reducing the supply of physicians in the locality and then who should volunteer their services. Naturally the result of such meetings should be reported to the secretary of the state association, who, in turn, should report to the Surgeon-General of the Army or to the secretary of the American Medical Association, as finally may be agreed on. In arranging for these meetings, one or two of the members should be selected to study up the matter so as to be prepared to outline to the assembly what is needed, especially as regards the physical and professional qualifications of the medical officer. THE JOURNAL has already published a large amount of literature on this subject, and it presents this week a suggestive list of books, pamphlets and official publications, as well as references to articles on the subject which have appeared in THE JOURNAL. It will be easy for those interested to secure the literature required.

Officers of the constituent state associations should consider the advisability of calling together the House of Delegates to discuss the matter, especially as it may affect their state. As will be noticed elsewhere in this issue, this has already been done by Michigan. The whole state would be more likely to be represented in the House of Delegates than in a meeting of the general body; in the latter case the attendance probably would be limited to those in the immediate locality. If delegates are called together, each county secretary

should see to it that at least one delegate from his county attends the meeting.

We appeal to the officers of the various constituent state and component county societies of the American Medical Association to realize the importance of this matter, and to appreciate the responsibility that rests on the organized profession to supply the nation with the necessary number of qualified medical officers. There is no reason for hysteria in this matter; there is need for calm, judicious action, so that the medical profession may in a tangible, practical way show that it is prepared to do its part.

HIGH COST OF LIVING AND HOSPITAL EXPENDITURES

An expert estimate, made by the national department of labor, of the changes in the cost of commodities indicates that if a dollar's worth of food bought in 1907 weighed 10 pounds it would weigh today only a trifle more than 7 pounds. This increase in cost has been particularly marked within the past few months. So far as this is compensated for by a proportionate increase in wages or salaries of persons, or by an augmented income arising from enlarged endowments or collections in the case of institutions, there may be no reduction in the purchasing power of the funds available. There are always, however, certain groups of interests in the community which do not share an increment in income commensurate with the advance in operating expenses and the cost of living. In such circumstances the problem of intelligent economy is brought prominently into the foreground of necessity.

Public hospitals, as a rule, derive their income for operation from sources that do not adjust themselves promptly to altered costs. Situations like the present which increase charges for food and labor may actually lead to retrenchment on the part of contributors to philanthropic purposes. Furthermore, even when institutional incomes are not materially affected by hard times, the budgets are usually made up and provided for long in advance of the expenditures actually contemplated; and all too often the margin for possible advance in costs is too small to permit operation of the plant on the scale proposed. It is not unworthy for institutions that aspire to do the greatest possible good to expand their efforts so as to make the last penny count. A far-sighted business man has more than once saved the day for an overzealous board of managers by introducing a margin of safety into the budget of expenditures.

How an unexpected threat of inadequate appropriation for projected hospital work can be met has recently been told by Dr. Fowler,[1] superintendent of the Louisville City Hospital. This institution has no income other than an annual appropriation made by the city government, the sum being based on earlier operating expenses. At the end of October it was found that, owing to advanced prices, the expenditures were exceeding the allowance by $2,000 a month. A few details of the consequent schemes for retrenchment are of immediate interest to physicians quite as much as to managers of institutions. The surgical department was required to exercise the utmost economy in the use of surgical dressings, gauze, cotton, plaster, catgut and alcohol. The cooperation of the entire staff was urged to cut down the number of hospital days of patients, allowing them to leave as soon as possible, and utilizing the cooperation of the district nurses' social service department to this end. The use of only well established drugs was emphasized. Great economies were introduced, without detriment to the patients, in the use of gauze and dressings; and every material which was not permanently damaged by use was returned to stock for employment in one of the many ways in which textiles can be utilized. The laundry expenses were cut down one-fourth by intelligent cooperation and emancipation from routine rules in the use of linens. Unnecessary waste of soap, soda and bluing was averted with a simultaneous saving of hot water; 150 pounds of soap a month were spared in this way. To these were added savings in the steward's department and economies in the pharmacy and even in the laboratory, where the crime of waste has been emphasized and all required products prepared on the spot as far as possible.

This gives, in briefest outline, an indication of how an increase in prices approximating 30 per cent. may be met, to a great extent at least. But there is a further wholesome lesson in the situation. It teaches to what extent the indifference and lavishness acquired in days of overflowing generosity may lead to habits of unnecessary extravagance. There is no occasion for unjustifiable procedures in any field of human endeavor, least of all in philanthropic enterprises. Hardships sometimes institute beneficent reforms.

1. Fowler, J. W.: Solving the Problem of the High Cost of Living in the Hospital, Mod. Hosp., 1917, **8**, 90. The statements above are taken from this article.

A RESTRICTED DIET

The expression "restricted diet" has acquired new significance as the result of recent studies in nutrition. Formerly these words directed attention to some obvious deficiency in the food supply, such as a deficit in calories or a low content of protein. A growing recognition of the importance of suitable inorganic salts, of the now undeniable need of water-soluble and fat-soluble unidentified dietary factors — the vitamins — and of an appropriate kind as well as amount of protein makes the problem of furnishing a truly unrestricted diet less simple than it appeared a few years ago. Seemingly slight deficiencies in the diet may render the milk secreted by the consumer of the inadequate food unsuited for the nourishment of the young.[1]

1. The Relation of the Mother to Some Dietary Factors in Milk, editorial, The Journal A. M. A., March 10, 1917, p. 782.

The nursing mother affected with beriberi is liable to produce milk which, though apparently of normal gross chemical composition, is deficient in some unidentified component to the extent of provoking infantile beriberi in her suckling young.

Such facts need to be emphasized over and over again at a time when the physician as well as the layman still hesitates to modify his inherited conceptions, and adheres strictly to the older views of diet. Nature has given us few single sources of adequate nutrition like milk. The long used cereal grains, like corn and wheat, might seem to have much to commend them as appropriate foods. Yet it is now known that young animals cannot grow properly when confined to the maize kernel as the sole source of nutriment. The reason for this has become clear.[2] The proteins of the maize kernel contain all the amino acids essential for growth, but the proportions of certain of them are such that they are not utilizable to a high degree as the sole source of protein. The inorganic content of the corn kernel is not of a character suitable for the promotion of growth. It has been found necessary to make salt additions to rations deriving their inorganic contents principally from this source, regardless of the nature of the other purified food ingredients added, before growth can take place. The fat-soluble dietary factor also is not sufficiently abundant in unfortified maize rations. But when the maize kernel is supplemented by the addition of suitable protein, inorganic salts and butter fat or other sources of the fat-soluble vitamin, normal nutrition becomes possible. The water-soluble unidentified dietary factor or vitamin is present, therefore, in sufficient abundance.

Wheat, likewise, has its shortcomings as a sole source of nutrients.[3] Rations restricted to wheat, even when apparently "balanced" in the older sense of supplying sufficient protein, calories and mineral matter, have invariably failed to produce viable young in any of the species on which the tests have been made. The damage may not be clearly apparent until the progeny is examined; hence the importance of a thorough mastery of the questions at issue by comprehensive investigations on the experimental animals.

The fact that neither wheat proteins alone nor corn proteins alone can satisfy nutritive needs, even in the midst of a liberal supply of all other known diet constituents, demonstrates anew that the proteins are by no means of equivalent values as sources of nitrogen. Furthermore, it is becoming evident that none of the cereal grains contain in the usually ingested portions sufficient of the fat-soluble vitamin which milk fat and egg yolk carry to meet the demands of a growing animal. Highly purified foods like starch, sucrose or table fats, on the other hand, contain none of the water-soluble as yet unidentified dietary factor, such as is recognized in relation to the cure of beriberi. The latter type of vitamin must be sought elsewhere in naturally occurring food materials.

Some of the features of the newer studies have long been appreciated; many of them are decidedly novel. McCollum has presented the situation as follows:

> If an animal can grow to maturity, reproduce, and rear young on a monotonous diet of purified protein, carbohydrate, butter fat and salt mixture, to which a little water or alcoholic extract of a grain is added, it is evident that all the complexes essential for complete nutrition are present in the mixture. There is abundant experience to prove that the protein of the ration may be a phosphorus-containing one, such as casein from milk, or it may be a phosphorus-free protein, as albumin of egg. The young animal can draw all the phosphorus needed from simple inorganic phosphates, which are furnished in the salt mixture added to its food. In the course of many trials I have never seen growth enhanced by the addition of organic phosphorus compounds.

With the recognition of heretofore unappreciated and indispensable factors to be taken into consideration, it may now happen that what was once considered a liberal diet may prove to be an unexpectedly restricted one in the present-day sense.

2. McCollum, E. V.; Simmonds, N., and Pitz, W.: Dietary Deficiencies of the Maize Kernel, Jour. Biol. Chem., 1916, **28**, 153.

3. McCollum, E. V.; Simmonds, N., and Pitz, W.: The Effects of Feeding the Proteins of the Wheat Kernel at Different Planes of Intake, Jour. Biol. Chem., 1916, **28**, 211.

Current Comment

THE WAR AND MEDICAL RESEARCH

"Who is going to care about a streptococcus six months from now?" said a well-known pathologist. War is declared; men's minds are on preparedness, on the food supply, on soldiers and on the wounded. Attention has shifted from the ordinary problems of life to the great topic. And so, too, the attention of research workers will shift from those phases of medical research which concern the cultural characteristics of micro-organisms, the intricate anatomy of the lower forms of life, the molecular arrangement of unknown minor constituents of the urine, to the broad problem of putting as many men as possible at the front, keeping them there and getting them back again as quickly as possible when the exigencies of war cause their temporary removal to the hospital. Research abroad is now concerned with the effects of shrapnel on the body, with the ability to inoculate the soldier against the many epidemic diseases that confront him, with the control of tetanus and with the control of tuberculosis, which is extensive among the soldiers of France. Whole wards are filled with patients suffering from nephritis; with cases of insufficiency of the heart attributed to the terrible strain of forced marches; entire hospitals are devoted to soldiers suffering from shell shock; to wounds of the brain or similar war injuries. The individual is lost in the mass. And thus the focus of medical research shifts in war time. Laboratory and research workers leave their laboratories to devote themselves to problems which concern not the disabilities of individual men, but the disabilities of groups of thousands of men.

WAR AND HEALTH

The enthusiasm for useful service of some sort, which has been awakened among all ages and classes of our population, and in all walks of life, is not to be without advantages in the domain of both personal and public hygiene. War, with its indeterminable emergencies, its unusual vicissitudes, and its specialized demands in the most diverse directions, has often forced attention to innumerable problems that pertain to health. The elimination of the ravages of disease among active troops has redounded to the credit of modern sanitation and prophylaxis. Military hygiene has set as its goal the attainment and conservation of health in the great body of fighting forces. There is much to be accomplished in the direction of eradicating unnecessary physical inferiority or deterioration associated with disease in all armies and navies. For some of the difficulties that present themselves an effective immediate solution is not in sight. In other cases, notably such as are represented by the incidence of typhoid fever and other infections among troops, the lessons of science are being applied with success. In any event, the world war has pointed to many defects which need remedies. It is a wholesome task to apply the contributions of the past when the opportunity arises; but there should be no hesitancy on the part of science to admit its shortcomings at all times and to feel them as a stimulus to further endeavor. This deserves to be emphasized, because in some quarters the admission of the need of investigation is looked on as an indication of the poverty of science and its indifference to practical applications. The conservation of health and the development of physical fitness are a soldier's first duty. Marksmanship, military tactics, drill and cooperation avail comparatively little when energy, strength and perfection of bodily training are neglected or lacking. This has been demonstrated again and again among "unseasoned" troops. Hence it is that so much attention is properly being concentrated on the establishment of health and vigor among groups of men in training everywhere. Athletic exercises compete with gun drills for recognition in the routine of a future soldier. The unexpected adjunct to this is the widespread movement to apply the same principle of health conservation among those who cannot be expected to join the active fighting units. In many cities and towns the "home guards," composed of men beyond the usual military age, are already engaging in suitable physical exercises with the express purpose of rendering themselves more capable of the service which a sound body can best contribute. If the maintenance of vigor is a desideratum among the middle aged sedentary type of our citizens at all times, it becomes a positive duty in a crisis in which the highest cooperation of each individual is likely to be enlisted. Only a few months ago it might have been unusual to see any considerable number of business men of an age beyond 50 engaged actively in the pursuit of health as a patriotic duty. Today groups of such persons may be seen in more than one city cheerfully joining in a morning tramp to promote vigor, or responding to some special prescription of systematic exercise dictated by a medical examination under semiofficial auspices. Boy scouts and other young persons are similarly inspired. The war has brought an unprecedented desire on the part of many to attain *mens sana in corpore sano*. The obedience to a patriotic impulse is almost certain to bring unexpected hygienic rewards.

A REFINEMENT OF SPUTUM EXAMINATION

Different areas of the urinary tract are covered with epithelial linings of cells differing considerably in form. Skilful microscopic examination may enable the expert to differentiate or distinguish the structures from varying localities, such as the renal tissue, the pelvis of the kidney, the urethra, the bladder and other places. In pathologic conditions, as is well known, the number of cells from special regions may become greatly augmented, so that the disturbance of function is readily detected by the examination of the urinary sediment. Similarly the cavities and channels which communicate with the mouth are lined with epithelial cells often of quite unlike morphologic character. Otani,[1] of the Kitasato Institute for Infectious Diseases, Tokyo, states that the mouth and pharynx are lined with polygonal flat epithelial cells, and the vocal cords covered with them, while the nasal cavities, larynx, trachea and bronchi are lined with ciliated cylindric epithelial cells. The bronchioles and bronchi are lined with cuboidal cells, while the alveoli are lined with polygonal cells which, unlike those of the other organs, have no nuclei. If inflammation occurs in any of these organs, the cells are expectorated with the mucus. The sputum must therefore contain the epithelial cells of the affected organ. The characteristic forms may, however, disappear during chronic inflammation. In tuberculosis of the larynx, the ciliated epithelial cells lining this cavity, according to Otani, are supplanted by a new growth of polygonal flat epithelial cells like those of the mouth. The new type then appears in the sputum of laryngeal tuberculosis. In sputum from the lungs, round or elliptical epithelial cells, much larger than pus cells, are often present. It might seem difficult, therefore, to identify the origin of unexpected or modified forms. But Otani maintains that the saprophytes play an important part in determining the source of sputum. He states that in spite of the fact that various kinds of cocci, bacilli, spirochetes and spirilla are found in the nasal and mouth cavities and in the larynx and pharynx, the sputum from the trachea and lungs is always free from these nonpathogenic micro-organisms. The sputum from these organs contains only the agent of the prevailing disease, such as *Bacillus tuberculosis* or *Diplococcus pneumoniae*. In cases of mixed infections, one or two species of bacteria are found. Sputum from the lungs will become mixed with pharyngeal products in its passage to the mouth. It might accordingly seem that a separation of secretion from definite localities would become impossible because of this inevitable contamination. It has been shown,[1] however, that by careful

1. Otani, M.: The Significance of the Epithelial Cells and Saprophytes in Sputum, Jour. Exper. Med., 1917, **25**, 333.

treatment and washing of the material in isotonic salt solution it becomes free of extraneous elements, such as polygonal epithelial cells, which may have come into contact with it. Saliva is dissolved, and reliable observations may be made on the residues. Microscopic examination of suitable washed sputum indicates its source. Sputum from below the vocal cords is clear of saprophytes. Erythrocytes and the bacilli present may indicate the site of the lesion, as in pulmonary hemorrhage. Tubercle bacilli may be found in laryngeal sputum in cases of laryngeal affection when there are no subjective symptoms. The possible importance of the new suggestions in the routine of diagnostic examinations at once becomes apparent.

THE HEREDITARY ABSENCE OF PHALANGES

The more unusual abnormalities of development and structure in the human body were formerly often classified as "medical curiosities" without any particular reference to their origin or biologic significance. Modern studies in heredity have done much to lend a new interest to the unusual manifestations of form and function in living beings. Careful investigations of the phenomena of inheritance have shown that they are in many instances more or less amenable to scientific treatment. Characters may be transmitted in dormant form so that they do not appear in each generation; but when they crop out unexpectedly it often happens that a study of the pedigrees involved will readily disclose the supposedly new manifestation as a natural inheritance from earlier progenitors. Thus anomalies or defects may actually "run in families" instead of being the fortuitous expression of an inexplicable outburst of nature. Hypophalangism, or the congenital absence of one or more phalanges and the corresponding soft parts from a digit, is a rare deformity in man. One, two or three phalanges may be lacking, and sometimes the hypophalangism occurs in association with polydactylism. Supernumerary or syndactylic digits are apt to be retarded or stunted in development, and injuries may now and then arrest the subsequent development of a digit. Such conditions, however, are not to be included among the instances of true hypophalangism. Cragg and Drinkwater[1] have lately described an inherited hypophalangism of this sort which has persisted through five generations. The defect consists of an entire absence of the distal phalanges from each digit except the thumb and great toe, and an extremely abortive condition of the middle phalanx in the same digits. This is a far more imperfect development than is represented in the likewise rare brachydactyly caused by an abnormal shortness or abortive condition of the middle phalanges or metacarpal bones, the distal phalanges always being well developed. In the new cases the finger nail is absent, and the thumb abnormality is of a different type from that in the fingers, and is affected independently. The distal bone is double. The condition is bilaterally symmetrical, and the inheritance is not strictly mendelian as to all its features. In this family there are twenty-five abnormal and only seventeen normal persons descended from affected parents, so that the incidence of the defect is greater than one would expect. Brachydactylous families usually exhibit a shortness of stature; this is not observed in the newly described subjects of hypophalangism. The male members are mostly engaged in farm work, the female in domestic service. They find their hands no marked detriment except in looks. The remarkable persistence of a serious physical defect of this sort through so many generations cannot fail to awaken silent reflections on the more unsuspected yet equally significant hereditary transmission of mental as well as other abnormalities which have a more serious import for the well-being of the race.

1. Cragg, E., and Drinkwater, H.: Hereditary Absence of Phalanges Through Five Generations, Jour. Genetics, 1916, **6**, 81.

ABROGATE THE PATENT ON SALVARSAN

THE JOURNAL has already commented on the difficulty in securing salvarsan, on the moral and ethical question as to whether or not it is justifiable for one person to control the output of a drug necessary to public health. This week we publish an account of the action of the St. Louis and Chicago medical societies, which are calling on the medical profession to appeal to their senators and congressmen to abrogate this patent. THE JOURNAL believes that this patent should be abrogated, not alone because the patentees have not supplied the demand, not alone because they have dictated to the medical profession who should have the drug and how much a physician might have, not alone because of the war with Germany, not alone because of the special needs of the government at this time for the control of venereal diseases, not alone because, as some claim, the patent at Washington does not correctly describe the product, but also because the people who are supplying this product are charging prices that are exorbitant compared to the price at which others in this country can supply it. The fact is that the salvarsan one can obtain today costs $4.50 per ampule of 0.6 gram, whereas the same dose of arsenobenzol — a preparation identical with if not better than salvarsan — costs $2.00 at retail, and as Dr. Schamberg says: "If we are permitted to continue marketing the same drug after the war, we can sell it at $1.00 or less per tube." To abrogate this patent would be doing an injury to no one. Certainly the patentees of salvarsan have already reaped their harvest — and a pretty rich one. The supply of salvarsan at a reasonable price in proportion to its actual cost of production is in the interest of the health of the entire population of the country, whereas to let matters rest as they are, is to the benefit of one man. While we are emphasizing here the cost, there is after all a greater question, and that is the supply necessary to help control the ravages of one of the most serious diseases which afflict humanity today. It is the duty of Congress to abrogate the patent on this preparation and, incidentally, on all medicinal preparations of importance.

Increase in Life Duration.—According to Dr. John N. Hurty, state health commissioner of Indiana, the average duration of life in Indiana has increased from 36.3 years in 1900 to 45.7 years in 1915.

Medical Mobilization and the War

GENERAL MEDICAL BOARD

Report of the Medical School Committee

At its meeting Sunday, April 15, this committee of the General Medical Board of the Advisory Commission of the Council of National Defense considered the plan of keeping the medical schools of the country in continuous operation as an emergency war measure. The committee consists of Drs. Arthur Dean Bevan, Thomas W. Huntington, Edward Martin, Charles H. Beck, Winford Smith and Joseph Marshall Flint, chairman.

If this plan is to succeed in the purpose for which it is proposed, namely, to produce a greater number of adequately trained men, that is, men with hospital experience, it is essential that its application be universal to enable hospitals to adjust themselves immediately to the changed conditions. This follows because hospitals and medical schools obviously are mutually dependent on the accustomed rhythm of the academic year for their demand and supply of men. It immediately developed that, on account of climatic conditions and the adoption of the Italian plan by certain medical schools, the inauguration of this scheme of continuous instruction could not be universal. The previous recommendations of the Hospital and Medical School Committee already adopted by the board to the effect that the staffs of these institutions should be reduced to the minimum necessary for routine work would make it practically impossible for them to adjust themselves to so radical a measure without danger of disorganization—the one thing the board feels it essential to prevent.

On the other hand, there can be no objection to a partial experimental adoption of the plan by those schools which are in a position to carry it out with a view to its wider adoption if necessary. The following conclusions were submitted for approval:

Voted that in the opinion of the Medical Board of the Council of National Defense, the present emergency does not justify it in advocating any universal change in the present scheme of adequate education of medical students. It is, however, in accord with a plan by which such medical schools as may be able can adopt an intensive course and operate continuously to graduate students earlier by the elimination of the usual vacation. It is the sense of this board, however, that the period of actual instruction should not be shortened to any degree.

As this plan of continuous operation has already been adopted by some medical schools, together with other urgent war measures such as the Italian plan, it is obvious that some modification of the rules governing the state boards of licensure becomes immediately necessary. The present crisis undoubtedly will develop other situations demanding similar decisions. It was not deemed wise, therefore, to ask the state boards to act on specific recommendations at this time, but rather to seek the power to cooperate with the medical board of the council and the medical schools in meeting any emergencies. With the idea of securing their cooperation not only for future unforeseen contingencies, but also for the specific problems presented in the continuous teaching plan, the so-called Italian plan—where medical students are taken to the front with Red Cross teaching units, and the possible use of medical students as hospital interns, the following recommendation was submitted:

Voted that the Medical Board of the Council of National Defense requests the State Boards of Licensure or Registration to take such action as may be necessary to enable them to cooperate with it and the Medical Schools in modifying temporarily their rules of procedure to the extent which may be made necessary by the present national crisis.

It was recommended that the board forward for the immediate consideration of the state boards of licensure the following questions for decision:

(1) Recognition of the Continuous Teaching Plan as an equivalent of the usual four year course in Medicine.

(2) Recognition of work done by a student with a Red Cross Teaching Unit according to the Italian Plan as the equivalent of the work usually done in the School and Hospital at home.

(3) Recognition of substitute work as interne in teaching hospitals as an equivalent of equal amount of work in the fourth year of the Medical School.

Standardization of Medical Supplies

A week of activity on the part of the Medical Section of the Council of National Defense culminated in a meeting in Washington, D. C., April 15, of 150 of the leading manufacturers of medical and surgical supplies, called together by Dr. Franklin H. Martin of the Advisory Commission. The object of the meeting was to secure the cooperation of all manufacturers of medical and surgical supplies in producing an adequate supply of needed articles as well as the standardization of those articles. Addresses were made by Mr. Frank A. Scott, chairman of the General Munitions Board, and Dr. F. F. Simpson, chief of the Medical Section. Conferences were held with the manufacturers by Colonel Fisher, Colonel Snyder and Colonel Darnall of the army, by Surgeons Murphy and Richards of the navy and by Assistant Surgeon-General Rucker of the Public Health Service. The manufacturers appointed committees to make a survey of the material on hand and the present resources as well as for the concentration and increase of production. A list of necessary staple articles which can be reproduced in abundance is being made out. The General Munitions Board will determine the order in which all contracts are to be filled. If the capacity of existing plants is not sufficient, other plants will temporarily produce such articles as may be needed. A large number of manufacturers have tendered their plants to the government. On Wednesday and Thursday of last week, the Committee on Standardization of Medical and Surgical Supplies and Equipments met in Washington and appointed subcommittees on special lines. The members of the committee are: Col. Jefferson R. Kean, Lieut.-Col. Carl R. Darnall, Surg. T. W. Richards (secretary); Surg. Joseph W. Murphy, Asst. Surg.-Gen. W. C. Rucker, Dr. George W. Crile, Cleveland; Dr. Harvey Cushing, Boston; Dr. Charles L. Gibson, New York; Dr. Richard H. Harte, Philadelphia; Dr. Henry S. Plummer, Rochester, Minn., and Dr. Frank F. Simpson, Pittsburgh, chairman.

The subcommittees appointed are as follows:

Surgery.—Dr. J. M. T. Finney, Baltimore, Md.; Dr. Charles H. Mayo, Rochester, Minn.; Dr. A. J. Ochsner, Chicago, Ill.; Dr. Rudolph Matas, New Orleans, La.; Dr. Richard H. Harte, Philadelphia, Pa.

Orthopedic Surgery.—Dr. Robert B. Osgood, Boston, Mass.; Dr. David Silver, Pittsburgh, Pa.; Dr. Joel E. Goldthwait, Boston, Mass.

Gynecology.—Dr. John G. Clark, Philadelphia, Pa.; Dr. William P. Graves, Boston, Mass.; Dr. Howard C. Taylor, New York, N. Y.

Eye.—Dr. Geo. E. DeSchweinitz, Philadelphia, Pa.; Dr. William H. Wilmer, Washington, D. C.; Dr. Edward B. Heckel, Pittsburgh, Pa.

Nose and Throat.—Dr. Chevalier Jackson, Pittsburgh, Pa.; Dr. W. B. Mason, Washington, D. C.

Genito-Urinary.—Dr. Hugh H. Young, Baltimore, Md.; Dr. W. F. Braasch, Rochester, Minn.; Dr. Frank Hagner, Washington, D. C.

Obstetrics.—Dr. J. Whitridge Williams, Baltimore, Md.; Dr. Barton C. Hirst, Philadelphia, Pa.; Dr. Palmer Findley, Omaha, Neb.

Roentgen-Ray.—Dr. G. C. Johnson, Pittsburgh, Pa.; Dr. Arthur C. Christy, Washington, D. C.; Dr. Arthur W. Goodspeed, Philadelphia.

Internal Medicine.—Dr. W. S. Thayer, Baltimore, Md.; Dr. Frank Billings, Chicago, Ill.; Dr. Hobart A. Hare, Philadelphia, Pa.

Neurology.—Dr. C. Loomis Dana, New York, N. Y.; Dr. Hugh T. Patrick, Chicago, Ill.; Dr. Daniel J. McCarthy, Philadelphia, Pa.

Dermatology.—Dr. Howard Fox, New York, N. Y.; Dr. Howard Morrow, San Francisco, Calif.

Contagious Diseases.—Dr. Richard P. Strong, Boston, Mass.; Dr. M. J. Rosenau, Boston, Mass.; Dr. Haven Emerson, New York, N. Y.

General Pathology.—Dr. William H. Welch, Baltimore, Md.; Dr. Simon Flexner, New York, N. Y.; Dr. Victor C. Vaughan, Ann Arbor, Mich.

Surgical Pathology.—Dr. Louis B. Wilson, Rochester, Minn.

Hospital Administration.—Dr. Winford H. Smith, Baltimore, Md.; Dr. Frederic A. Washburn, Boston, Mass.; Dr. B. W. Caldwell, Pittsburgh, Pa.; Dr. Warren L. Babcock, Detroit, Mich.; Dr. S. S. Goldwater, New York City.

Nursing.—Miss Anna Maxwell, New York, N. Y.; Miss Jane A. Delano, Washington, D. C.

Physiology.—Dr. W. B. Cannon, Boston, Mass.

Dentistry.—Dr. E. C. Kirk, Philadelphia, Pa.; Dr. Eugene Smith, Boston, Mass.

Chemistry.—Mr. Earl B. Phelps, Washington, D. C.

Pharmacy.—Dr. Reid Hunt, Boston, Mass.

New Appointments in Utah.—Drs. Guy J. van Scoyoc and R. T. Gellison, Salt Lake City, have been commissioned as lieutenants in the Medical Corps of the Utah National Guard.

Address to Omaha Physicians.—Col. John M. Banister, M. C., U. S. Army (retired), delivered an address before the Omaha-Douglas County Medical Association, April 3, on "Medical Needs of our Military Service in Case of War."

Dental Department a Hospital.—During continuance of the war, the new buildings of the Evans Dental Department, University of Pennsylvania, are to be converted into a 200 bed hospital for the active men of the army and navy.

Base Hospital for Toledo.—At the meeting of the Toledo (Ohio) Academy of Medicine, March 2, it was voted to establish a base hospital in Toledo. The Commerce Club of Toledo has pledged $30,000 for the establishment and maintenance of this hospital.

Field Hospital Returns Home.—The First Ohio Field Hospital, under the command of Major Frank W. Hendley, Cincinnati, returned home, March 28, after service on the southern frontier. A smoker was given to the company in the rooms of the Cincinnati Academy of Medicine, April 2.

Medical Dressings Needed in Europe.—The National Surgical Dressings Committee of America has made an urgent request for additional help. Between October 16 and December 16, the committee sent to France, England, Italy, Belgium, Serbia and Roumania a total of 1,265,609 dressings.

Lectures on Military Medicine.—The executive committee of the staff of St. Luke's Hospital, Cleveland, has made arrangements for Dr. Samuel W. Kelley to give a series of lectures on military medicine and surgery in the Carnegie East Building of St. Luke's Hospital on Monday and Wednesday evenings, beginning April 11.

Base Hospital for Columbus.—At a meeting of the directors of the Columbus (Ohio) Red Cross Chapter and the Chamber of Commerce, March 28, steps were taken to organize a base hospital unit for Columbus. The instruction work is in the hands of Dr. Charles S. Means, who is assisted by Drs. John W. Means, Edwin A. Hamilton and Florus F. Lawrence.

Johns Hopkins Hospital Plans Move to United States Service.—The Johns Hopkins Hospital is planning to eliminate all employees, physicians or others, who are not in sympathy with the government. No such cases have yet come to the attention of the management. All the physicians of the hospital have volunteered their services in the field if necessary.

Shortage of Medical Men in England.—The Earl of Derby, in moving for a second reading of the bill to review military exemptions, said "We have lost more than 400 doctors, killed or wounded, in the battle of the Somme alone, and at the present, we are, I won't say critically, but lamentably, short of medical men and I am afraid we will continue so in the immediate future."

Bill to Require Military Training.—A bill was introduced in the Pennsylvania Senate, April 3, by Senator Crow of Fayette County, amending the act regulating and licensing practitioners of medicine in Pennsylvania, so as to provide that before an applicant be licensed to practice he shall "have received an approved three months' field course and service in military training."

Surgical Unit in California.—The first surgical unit offered to the government by California is that of San Bernardino. The unit is formed under the Red Cross Society, and is commanded by Dr. Henry W. Mills, assisted by Drs. Thomas R. McHugh, David C. Strong and Claude H. Lashlee, together with seven nurses, two orderlies and a secretary-stenographer.

Hospital Ships Sunk.—The British hospital ship *Salta* is said to have been sunk by a mine in the English Channel, April 10, and fifty-two persons were drowned.——The British hospital ship *Gloucester Castle* was torpedoed, it is said, without warning in the English Channel, March 30. Since the beginning of the war, six hospital ships of the allies have been destroyed by torpedoes or mines, with a loss of 247 lives.

Services of State Health Board Offered Government.—At a meeting of the Kentucky State Board of Health in Louisville, April 2, the board offered its personal equipment and the active services of its trained health officers to the president, and assured him of the readiness of as many physicians as may be assigned to the quota of the state to serve in whatever capacity thought necessary within the country or over-seas.

New York Physicians Volunteer.—At a meeting held at police headquarters, April 6, presided over by Chief Surgeon Edward T. Higgins of the police department, about 150 physicians volunteered to offer professional services under the direction of the police department. An organization by boroughs was appointed and a committee was appointed to serve with Dr. Higgins in obtaining the necessary equipment for the service.

Ohio Assignments.—Lieut.-Col. Joseph A. Hall, chief surgeon of the Ohio National Guard, announced, April 7, the following appointments in his department: Major Charles E. Neal, M. C., assigned adjutant to the chief surgeon; Capt. James M. Bentley, M. C., relieved from duty with the First Field Hospital, and assigned to cavalry; Capt. John D. Spelman, M. C., relieved from duty with the First Field Hospital, and assigned to the First Infantry.

Military Instruction in Milwaukee.—Under the authority of the adjutant general, Major Gilbert E. Seaman, chief surgeon, Wis. N. G., has established a school of instruction in military medical surgery and hygiene for medical officers and noncommissioned officers of the sanitary troops. The sessions are being held at the headquarters of the Field Hospital, Goldsmith Building, Milwaukee, on Tuesdays and Thursdays at 4 p. m., and began April 10.

New York Broad Street Hospital for War Service.—The board of governors of the Broad Street Hospital, New York City, which is in process of construction, has offered it to the government, together with the services of a medical and surgical staff. A fund of $200,000 is to be raised to equip the building and make changes in the original plans. Barber and Company have made an addition contribution of $50,000 to further these plans, and Mrs. James Barber has contributed a motor ambulance.

Kenosha County (Wisconsin) Society Acts.—The Wisconsin State Medical Society has appointed the following as a Kenosha County Committee on Medical Preparedness: George F. Adams, chairman; J. F. Hastings, secretary; P. P. M. Jorgensen, G. Windesheim, J. H. Holm, J. H. Cleary and W. J. Hanley. This committee has held two meetings. A tentative working plan has been outlined and is to be submitted to the physicians of Kenosha County. Another meeting is to be held April 19.

Health Lessons of War.—Sir Alfred Keogh, surgeon-general of the British army, in a recent interview revealed the close cooperation between the American and British medical services, and stated that he had given and is still giving the medical men of the army the benefit of the English experience in keeping healthy its enormous army. The first essential for an efficient army is that it be well fed, the second that it be kept free from epidemics, and the third that great care shall be exercised as regards rural sanitation.

Western Reserve Lectures on Military Sanitation.—A series of eight lectures on "Military Medicine and Sanitation" is being given by Major Harry L. Gilchrist, M. C., U. S. Army, at the School of Medicine of Western Reserve University, Cleveland, on Tuesdays at 4:30 p. m. The series commenced April 10, and includes "Organization of the Sanitary Service," "Military Hygiene and Sanitation," "The Recruit," "Camp Sanitation," "Hygiene of Mobile Troops," "Water Supply of the Army," "Military Medicine," and "Military Surgery."

Shortage of Physicians.—There is an alarming shortage of physicians in New Zealand on account of the war. In a report made by the chief health officer to the minister for public health it is shown that instead of one medical man for every 2,000 of population, there is one physician for every 2,380 of population. In the four medical districts of the colony there are in practice 546 medical men; 190 are on active service and forty-seven are employed at various military camps or as examining officers on the Military Medical Board.

Baltimore Physicians Prepare.—At a meeting of the Baltimore City Medical Society, March 30, action was taken on the resolution drawn up by the Maryland Committee on Preparedness and endorsed by the council of the State Medical Society. Major Robert E. Noble read a paper on "What Doctors the Government Needs and How It Will Use Them in Peace or War." Dr. William H. Welch, Baltimore, discussed "The Medical Profession and Preparedness," and Dr. Gordon Wilson spoke on "What Doctors of Baltimore Can and Should Do."

Educational Facilities for British Prisoners of War.—The *Lancet* states that the Conference of Examining Bodies has voted to recognize work done and examinations passed in the camps of prisoners of war. It is believed that this step will prove a great encouragement to the men to use wisely the time of their captivity, and of material assistance to them on their return home. News of this arrangement is to be sent as soon as possible to the various internment camps in enemy and neutral countries, and it is suggested to friends and relatives writing to the prisoners of war to inform them of the matter.

Ambulance Corps Notes.—Fifty students at the Washington and Lee University, Lexington, Va., have organized a volun-

teer ambulance corps for service with the army.——The Jackson County (Mo.) Medical Society, Kansas City, has presented the Third Infantry, Mo. N. G., with a trailer for the ambulance, recently given to it by the Daughters of the Revolution. The cost of the trailer was $1,500, and it will accommodate four patients.——At a meeting of Chicago Lodge No. 4, B. P. O. E., it was voted to purchase two field ambulances to be sent to France for immediate service. The cost of the ambulance and equipment will be $3,200.

Offers Services to Soldiers' Families.—The Barton County (Kan.) Medical Association, at a meeting in Hoisington, April 9, agreed to endeavor to take care of and to keep intact the practice of any member of the society who may enter the medical service.——The Bay City (Mich.) Medical Society has offered to give its services free to families of all Bay City men who enlist in the army or National Guard. ——Talbot County (Md.) Medical Society, at its meeting in Easton, April 6, adopted resolutions tendering professional services gratuitously to the members of families of those who are called to the colors.

Michigan State Society to Hold Special War Meeting.—A call has been issued for a special meeting of the house of delegates of the Michigan State Medical Society to convene in Battle Creek at 10 a. m. on Thursday, May 10. The call advises the members of the state society that Michigan should furnish 600 physicians for service in the army and the purpose of the meeting is to discuss and determine how best to meet the responsibility that has been placed on the medical profession of Michigan by reason of the declaration of war. Not only members of the house of delegates, but all members of the organization are asked to be in attendance at the general session planned. Prominent men of the profession and representatives from the army and navy medical departments will present the questions for discussion.

Navy Medical Corps Examinations.—The navy requires for its regular medical corps 300 physicians. Examinations for this branch will be given at the Naval Hospital. The navy is also enrolling a number of doctors for the Naval Coast Defense Reserve. This duty will require the service of the doctors only in the Fourth Naval District in and around Philadelphia in time of war only. If doctors are enrolled they can be given active duty at once, provided they personally apply to the commandant of the Navy Yard, Philadelphia, for this duty. All information relative to any medical branch of the service will be cheerfully given by Surg. Ralph W. Plummer, U. S. Navy, at the mayor's office, city hall. Any of the medical officers of the Naval Hospital or of the Navy Yard will also supply the desired information.

Hospitals Tendered Government.—Dr. Karoline S. R. Engelhardt, owner of the Lansdale Private Sanitarium, has offered the institution to the government for use in case of war.—— The Memorial Hospital, Chicago, under the charge of Lieut. Francis Deacon, M. R. C., U. S. Army, has been offered to the War Department as a general hospital, and arrangements are being made for the organization of a base hospital unit. ——The North Chicago Hospital has offered an independent unit to the government for use in case of war. Dr. Joseph C. Beck will be chief of staff of the unit and Dr. Clarence Loeb, assistant. The unit proposes to maintain two staffs, one at the front and the other in Chicago. A contribution of $10,000 toward the unit has been made by Mr. V. Mueller, president, and Mr. George Walrich, secretary of the Mueller Instrument Company.

Call for Service.—Only about 400 men in the Philadelphia Division have been enrolled in the Officers' Reserve Corps of the Army and many more are needed. Few of these are young enough for the first call into active service. The navy is in urgent need of medical reserves for immediate duty. Recruits cannot be examined the day they enlist, for there are now only about thirty physicians in the Coast Defense Reserve to examine them. The pay in either service amounts, with maintenance, to about $200 per month. Each medical volunteer can be assured that his practice will be cared for while he is away. A committee of the society headed by Dr. William W. Keen will be prepared to do this work and turn over the accounts for collection. Those wishing to join the Coast Defense Reserve of the Navy should call on Dr. Robert A. Bachmann at the United States Naval Hospital any day.

Pennsylvania National Guard Changes.—Majors Herbert A. Arnold, Ardmore, and William J. Crookston, Pittsburgh, have been commissioned lieutenant colonels in the Medical Corps of the National Guard, and Capt. George J. Swartz, Philadelphia, has been commissioned major.——Major James F. Edwards, Pittsburgh, and Lieuts. Edward K. Tullidge, Philadelphia, Albert A. Wagner, Pittsburgh, Walter C. Shaw, Ridgeway, Theodore L. Hazlett, Pittsburgh, and James W. Doughty, Philadelphia, have resigned and been honorably discharged from the state service.——Lieut. Leonard D. Frescoln, M. C., has been relieved from duty with the Thirteenth Infantry and assigned to duty with the First Infantry.—— Major Allen W. Urmson, M. J., has, on his own request, been placed on the officers' reserve list.——Major Elmer E. Keiser, M. C., has, on his own request, been placed on the retired list.

Young Men Needed for Hospital Corps.—"I have read with interest your editorials and current comments on medical preparedness and the report of the General Medical Board and have acted accordingly. I have volunteered to become a member of the Medical Reserve Corps of the U. S. Army. Two young men also have been made interested in the Hospital Corps of the Navy and will enlist as hospital apprentices." This comes from Dr. John A. Koch, of Quincy, Ill. What Dr. Koch has done should be done by physicians all over the country. Both the Army and Navy need young laymen for the Hospital Corps. The Navy needs young men of a high class for enlistment in its Hospital Corps, and physicians should urge young men of their acquaintance who are high-school graduates and who think they would make good and reliable members of the Hospital Corps to enlist at the nearest naval recruiting station.

Government Sends Scientific Commission.—Six American scientists accredited to the American embassies in London and Paris are now on their way to England and France to cooperate with the scientific men of those countries in studying problems arising out of the war. They are sent by the Advisory Commission of the Council of National Defense and the National Research Council. Members of the party and the subjects which they will investigate are Dr. Joseph S. Ames, Johns Hopkins University, aeronautic conditions; Dr. Richard P. Strong, Harvard, camp sanitation; Dr. Linsley L. Williams, assistant health commissioner of New York, health; Dr. George A. Hulett, Princeton, chemistry of explosives; Dr. Harry Fielding Reid, Johns Hopkins, scientific map making and photography from aeroplanes; Dr. George K. Burgess of the federal bureau of standards, gun metals and rigid dirigibles. Early reports on the special subjects assigned will be made.

Treatment of Gas Asphyxia.—The treatment of soldiers who have been "gassed," by the method of Chassevant, is described in the *Lancet*, London, March 31. The hospital of which Chassevant was in charge, acting as an evacuation hospital, received the gassed soldiers from two to eight hours after being gassed. Some had already received first aid and others came direct from the trenches. All were subjected to the rhythmic inhalation of oxygen under pressure, at several sittings, with intervals between. Chassevant says oxygen given from a rubber bag after the usual method is of no efficacy; it is necessary to insufflate the oxygen on the lines of d'Arsonval's treatment of carbonic oxid intoxication. A rubber catheter is introduced far back in the buccal cavity, and is connected with a cylinder of compressed oxygen. By opening and shutting the regulator key active rhythmic insufflation at the rate of 15 or 16 to the minute is brought about. The effect is to calm the dyspnea, favor aeration of the lungs, and render unnecessary the patient's painful efforts at inspiration. To combat cardiac weakness camphorated oil in doses of from 5 to 15 c.c. or more in twenty-four hours is employed.

The Base Hospital.—One of the subjects particularly prominent at this time is the base hospital. Numerous physicians have affiliated themselves with the base hospital without a thorough understanding of what such service involves or of just what duties they will be called on to perform. Major T. S. Bratton of the Medical Corps a few years ago outlined the internal administration of the base hospital. ("The Internal Administration of a Base Hospital," T. S. Bratton, "Collected Papers, Field Service School for Medical Officers," Fort Leavenworth, Kan., 1914.) The functions of a base hospital are: "to receive patients from the field and evacuation hospitals as well as cases originating on the line of communications and at the base, and to give them definitive treatment." By definitive treatment is meant the final treatment, and its great importance is to prevent patients getting out of the control of the army authorities and back home where sympathetic friends, with false ideas of their duties to their country, will attempt to prevent the return of the patients to the army. This has been the case in past wars and is certainly an important problem. It becomes clear,

then, that the base hospital is called into duty whenever active warfare ensues. And not till then.

Examination of Dentists for Army.—The surgeon-general of the army announces that examinations for the appointment in the Dental Corps of the Army will be held at Fort Slocum, New York; Columbus Barracks, Ohio; Jefferson Barracks, Mo.; Fort Logan, Colo., and Fort McDowell, Calif., May 7 and July 2. Application blanks and full information concerning these examinations can be procured by addressing the "Surgeon-General, U. S. Army, Washington, D. C." The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between 21 and 32 years of age, a graduate of a dental school legally authorized to confer the degree of "D.D.S." and shall be of good moral character and habits. Successful applicants will be immediately appointed (as far as the number of vacancies will permit) to the grade of first lieutenant, at an entrance salary of $2,000 per annum. In order to perfect all necessary arrangements for the examination, applications must be in the possession of the surgeon-general at least two weeks before the date of examination. Early attention is therefore enjoined on all intending applicants. There are at present fourteen vacancies and on July 1, 1917, there will be twenty-two additional vacancies.

Advancing Medical Students in Preparation for Mobilization.—To promote the condition of preparedness in the medical services in accordance with the request of the surgeons-general of the army and navy, the medical departments of university and other medical schools are considering the question of having a continuous session, omitting the usual summer vacation, so that students may be graduated sooner. Harvard has announced that arrangements have been made for instruction equivalent to that provided for fourth year students to be continued throughout the summer until the beginning of the regular academic year, September 24. This will permit students in good standing who register for the course by May 1 to complete their fourth year and come up for examination for the M.D. degree at mid-year. Certain other privileges with reference to obtaining the M.D., degree are to be permitted to men entering the medical service of the army or navy, according to the Harvard announcement. The faculty of the University of Louisville, Medical Department, has also taken action to begin, one week after the annual commencement this year, the regular schedule of lectures for all classes. The work will continue for eight months, at the conclusion of which time the next senior class will be graduated.

Utilization of Insane in Preparedness Movement.—The State Lunacy Commission has submitted the following plans to the State Board of Agriculture as a part of the preparedness movement: 1. The placing out system, whereby the commission would parole to carefully selected farmers as many able-bodied feebleminded patients as are able to do farm work. 2. The Emergency Squad.—A carefully selected group of patients who would be taken from the hospital in motor trucks to adjoining farms and there gather the crops, in case the farmer is unable to get sufficient labor. 3. Cooperative cultivation by which the planting of necessary crops, such as corn, potatoes, etc., would be undertaken. In addition it is suggested that land adjoining each hospital now lying idle be leased or bought and placed under cultivation by the institution. 4. That the state cultivate large tracts of waste land, placing thereon 100 or more patients under proper supervision to cultivate this land, the products to be used as directed by the State Board of Agriculture. In utilizing the labor of the patients in the institutions, only those well adapted to farm life would be selected, and every safeguard would be used to avoid accident. A special meeting of the superintendents and boards of managers was called for April 19 to study these propositions.

Requirements for the Nurse Corps.—Dr. L. G. Leland, Newton Falls, Ohio, writes: Will you please give me the minimum educational requirements for acceptance on the nursing force of the army? As similar letters are being received from others, we cite the following from the Act of Feb. 2, 1901, creating a nursing corps: All nurses in the Nursing Corps shall be appointed or removed by the surgeon-general, with the approval of the secretary of war; they shall be graduates of hospital training schools and shall have passed a satisfactory professional, moral, mental and physical examination. Applicants must be between 25 and 35 years of age and unmarried. The applicant must be not less than 60 inches and not more than 70 inches in height and must weigh not less than 100 pounds nor more than 195 pounds. The training school from which she shall have graduated must be one which gives a thorough professional education, both theoretical and practical. Residence of at least two years in an acceptable general hospital of 100 beds or more is required. Graduates of training schools connected with hospitals not meeting the above requirements may, on submitting proof of at least six months' experience in a large general hospital, be put on the eligible list if found otherwise qualified. The professional and mental examination of applicants is in writing, and is conducted by the superintendent. Reference should be made to the discussion of the Nurse Corps in a special article on the administration of the medical department, this issue, page 1180.

Some Practical Points from German Experience.—Some months ago, Col. Hans Daae, head of the Norwegian army medical service, made a general tour of inspection of the German army medical service to study changes which had occurred since the beginning of the war, and he gives his observations in Volume 1, 1917, of the *Norsk Tidsskrift for Militærmedicin*. Colonel Daae was impressed greatly by some of the marked changes in equipment which have resulted from changing conditions. Dressings in the depot for supplying the medical department were packed in squares stamped on both sides, and different colors were employed to distinguish between sterilized and nonsterilized dressings. As there is great need for metal, all cases containing metal have been discarded. Instruments formerly kept in metal cases are now wrapped in cloth which has been previously impregnated with paraffin. A special department is devoted to supplying new lenses for broken spectacles, and it is stated that about 500 application forms for such new lenses were received daily. Every article of copper, brass and nickel was withdrawn from the medical service and replaced by galvanized iron or papier mâché with apparently satisfactory results. It was found that the organization of the medical service in the field had to be thoroughly revised. Early in the war the infliction of a single casualty was the signal for a medical officer to be sent, and the service suffered great losses in the first months of the war. A similar mistake was made in establishing dressing stations before it was even comparatively safe to do so, that is, before the actual conflict had begun to quiet down. The casualties in the medical service assumed such alarming proportions that orders were issued that military surgeons should not be sent to such posts at the command of the nonmedical staff, but should themselves determine when their services should be given. Colonel Daae was struck by the important change in the status of the officers in the army medical service during the war. *They have been put on an equal footing with other officers in the field.*

References to Literature on Military Medicine.—Several inquiries have been received concerning the securing of literature on military medical service. The following books are recommended for consultation by those desiring to familiarize themselves with the work of the medical officers:

Manual for the Medical Department, 1916, Supt. of Documents, Government Printing Office, Washington, D. C., 60 cents.
Field Service Regulations, 1914, ibid., 60 cents.
Army Regulations, 1913, ibid., 60 cents.
Drill Regulations and Service Manual for Sanitary Troops, 1914, ibid., 50 cents.
Straub: Medical Service in Campaign, P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, $1.50.
Havard: Military Hygiene, William Wood & Co., 51 Fifth Ave., New York, $5.
Keefer: Military Hygiene and Sanitation, W. B. Saunders Co., W. Washington Sq., Philadelphia, $1.50.
Mason: Handbook for Hospital Corps, William Wood & Co., $4.
Ashburn: Military Hygiene, Houghton, Mifflin Company, Cambridge, Mass., $1.50.
Woodhull: Military Hygiene, John Wiley & Sons, 432 Fourth Ave., New York, $1.50.
Woodhull: Military Hygiene for Officers of the Line, John Wiley & Sons, 432 Fourth Ave., New York, $1.50.
Morrison and Munson: Study of Troop Leading and Management of the Sanitary Service in War, Cavalry Journal, Fort Leavenworth, Kan., $1.25.

In addition, reference should be made to the following articles on military subjects which have appeared in THE JOURNAL during the past three years:

Rejections and Enlistments in the Army, editorial, Jan. 31, 1914, p. 386.
Alcohol Barred from Navy, editorial, April 11, 1914, p. 1176.
Disease Dangers of Mexican Invasion, editorial, May 2, 1914, p. 1403.
Government Medical Services Ready, editorial, May 2, 1914, p. 1406.
The Medical Reserve Corps, editorial, May 2, 1914, p. 1407.
Mitchell, S. W.: The Medical Department in the Civil War, May 9, 1914, p. 1445.

Oman, C. M.: Medical and Surgical Work on a U. S. Battle-Ship, May 16, 1914, p. 1541.
Military Surgery in the Balkans, editorial, Aug. 1, 1914, p. 405.
The Army and Mental Disease, editorial, Oct. 17, 1914, p. 1396.
Health Conditions in the Navy, editorial, Dec. 12, 1914, p. 2139.
Hoguet, J. P.: Observations on Military Surgery in the Early Weeks of the War, Dec. 19, 1914, p. 2194.
Health in Our Army," editorial, Jan. 9, 1915, p. 155.
Military Surgery, Correspondence, Jan. 9, 1915, p. 167.
Current Aspects of Military Surgery, editorial, March 6, 1915, p. 832.
War Surgery, editorial, March 13, 1915, p. 912.
Alcohol in European Armies, editorial, May 15, 1915, p. 1663.
Jablons, B.: Pathology of War Surgery, June 19, 1915, p. 2045.
Preparedness, editorial, July 1, 1915, p. 42.
Drennen, W. E.: Experiences in Military Surgery, July 24, 1915, p. 296.
Straub, W.: Alcohol in European Armies, Correspondence, Aug. 21, 1915, p. 732.
What the Civilian Doctor Called to Active Service with the Army Should Know:
1. Duties in the Zone of the Interior, Feb. 5, 1916, p. 425.
2. Duties on the Line of Communications; Sanitary Measures in Camps, Feb. 12, 1916, p. 508.
3. Duties in Zone of the Advance, Feb. 19, 1916, p. 571.

A reprint of this series will be sent on receipt of a stamped addressed envelope.

Medical Preparedness and the Army, editorial, Feb. 19, 1916, p. 575.
Increased Medical Staff in the Army, editorial, April 8, 1916, p. 1121.
The Army Medical Department and Preparedness, editorial, April 22, 1916, p. 1313.
The National Defense Bill and the Army Medical Service, editorial, June 10, 1916, p. 1859.
Disease Dangers of War with Mexico, editorial, June 24, 1916, p. 2070.
The Army Medical Service as a Career, editorial, July 1, 1916, p. 40.
Osgood, R. B.: Orthopedic Surgery in War Time, Aug. 5, 1916, p. 418.
Membership in Army Medical Corps as a Career, editorial, Oct. 28, 1916, p. 1308.
Medical Officers' Reserve Corps, editorial, Oct. 28, 1916, p. 1308.
Recent Legislation for the Medical Corps of the Navy, editorial, Nov. 11, 1916, p. 1452.
Chamberlain, W. P.: Care of Troops on the Mexican Border, Nov. 25, 1916, p. 1573.
Medical Progress in the Navy, editorial, Dec. 16, 1916, p. 1854.
Noble, R. E.: Medical Corps of Army as a Career, March 31, 1917, p. 955.
Holcomb, R. C.: The Navy and Its Relation to the Medical Profession in Time of War, April 14, 1917, p. 1095.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Protest Against License Fee.—At a meeting of the Birmingham Commission, March 27, more than twenty-five physicians appeared to protest against the license schedule, which taxes each physician a minimum of $15 on a practice of $2,000. The commission suggested the appointment of a committee of three to frame an equitable schedule.

Personal.—The resignation of Capt. William T. Weissinger, Uniontown, M. C., Ala. N. G., was accepted, March 9.——Dr. William W. Dinsmore, Montgomery, assistant state health officer, has been appointed state prison inspector to succeed Dr. William H. Oates, term expired.——Dr. H. J. Lowrey has been appointed assistant health officer of Birmingham.

CALIFORNIA

Measles Epidemic.—Measles is reported to be more prevalent in California than in any other period in its history. More than 8,500 cases were reported during the first three months of this year.

Medical Boards Bill Killed in Committee.—The bill introduced by Senator Edgar Luce, which seeks to combine the five state medical boards now in existence, was tabled by the Senate Public Health and Quarantine Committee at its session, March 20.

Smallpox on Steamer.—The steamer *Rose City* of the San Francisco and Portland Steamship Company reached San Francisco, March 20, with a case of smallpox on board. The patient was removed to the Isolation Hospital, the vessel was quarantined and the passengers, after being vaccinated, were allowed to land.

Personal.—A complimentary farewell was tendered Dr. Jacob C. Geiger, chief bacteriologist of the State Hygienic Laboratory, Oakland, and assistant director of the Bureau of Communicable Diseases, of the State Board of Health. Dr. Geiger entered the United States Public Health Service, April 15, and has been ordered to duty in malarial prevention work in New Orleans.

Physicians' Building Reconstructed.—The Physicians' Building, Sacramento, is undergoing reconstruction. The remodeled building will be five stories in height and will be thoroughly equipped for the use of physicians and dentists.——A new building, representing an investment of $350,000, to be devoted exclusively to the use of physicians and dentists is to be erected at Grand Avenue and Webster Street, Oakland. The structure will be seven or ten stories in height, and of steel and pressed brick construction.

Drugless Healers Ask Injunction.—L. E. Nickell and Robert J. Burke, drugless healers and ordained ministers of the Church of the Spiritual Temple of Truth, Los Angeles, have applied for an injunction to prevent the enforcement of the state law requiring medical examinations for all persons practicing healing. The appeal attacks the state medical law as unconstitutional and class legislation, and as depriving the petitioners of their right to make a living, a license to practice medicine being denied them.

Donations Toward University Hospital.—At the charter day exercises of the University of California, March 23, Pres. Benjamin Ide Wheeler announced that $43,493 has been given by various friends of the university to furnish and equip the new University Hospital in San Francisco, a 215-bed teaching hospital, itself built through gifts of $586,000 from a number of different benefactors. The donors of the equipment fund are: Wallace M. Alexander, $2,000; an alumnus of the university, $10,000; F. W. Bradley, $5,000; William H. Crocker, $2,616.50; the children of Regent F. W. Dohrmann, $500; D. C. Jackling, $1,000; Charles W. Merrill, $1,000; Mrs. James Moffitt, $15,000; N. Ohlandt, $1,500; a friend, $2,377; a friend, $2,500.

Summer Graduate Course.—Stanford University Medical School announces its fourth summer graduate medical course, which will extend from July 9 to August 17. Classes will be held in the Medical School Building, Sacramento and Webster streets; the Lane Hospital, at Clay and Webster streets; San Francisco Hospital, at Twenty-Second Street and Potrero Avenue, and the Isolation Hospital at Army and DeHaro streets. The course of instruction will include clinical medicine, roentgenography and Roentgen therapy, cutaneous medicine, syphilis, pediatrics, clinical surgery, anatomy, orthopedic surgery, genito-urinary surgery, clinical ophthalmology, otology and laryngology, practical obstetrics, gynecology, cystoscopy, anesthesia and pathology. As many courses as desired may be taken, the total maximum fee being $150. All correspondence regarding this course should be addressed to the dean of the school.

ILLINOIS

Contract for Hospital Awarded.—A contract for the erection of the first unit of the Illinois Valley Hospital, Ottawa, has been awarded. The new building will cost about $30,000 and will be known as the Diagnostic Pavilion. It will be one story in height and of masonry construction with high basement.

Talks Before Medical Society.—At the quarterly meeting of the Warren County Medical Society, held in Monmouth, April 15, Dr. Kellogg Speed, Chicago, delivered an address on "Military Surgery," illustrated by stereopticon views, and Dr. Wilber E. Post, Chicago, spoke on "The Use of Salts and Alkali in Nephritis."——Dr. Charles P. Emerson, Indianapolis, dean of the Indiana University School of Medicine, delivered an address, April 13, on "Modern Medicine and the School Child," before the Illinois State Teachers' Association.

Personal.—Dr. Leon W. Kelso, Paxton, has been appointed local surgeon for the Illinois Central Railroad, succeeding Dr. Spencer S. Fuller, resigned.——Dr. Robert W. Allen, Donnellson, underwent operation at the Hillsboro Hospital, April 4, and is reported to be doing well.——Dr. John W. Earel, Quincy, who is expected to resume practice after an absence of nearly a year on account of illness, has had a relapse and may not be able to return to work for two or three months.

State Society Meeting.—The annual meeting of the Illinois State Medical Society will be held in Bloomington, May 7 to 10. All business sessions will be held in the Masonic Temple. On the Sunday preceding the meeting, which will be known as Health Sunday, the pulpits in the various

churches will be filled by visiting physicians. In addition to the sectional meetings, there will be a public mass meeting at the Second Presbyterian Church on Sunday evening when addresses will be given by Drs. William L. Noble, president of the society, John Dill Robertson, and William A. Evans, all of Chicago. On Monday evening a public meeting will be held at the high school auditorium at which addresses will be given by Dr. Joseph C. Beck, Chicago, on "Prevention of Blindness" and by Dr. Richard J. Tivnen, also of Chicago, on "The Prevention of Deafness."

Chicago

Ancient Medicine.—The next meeting of the Society of Medical History of Chicago will be held at the Hotel Sherman, April 27, when Prof. Morris Jastrow, Philadelphia, will deliver an illustrated lecture on "The Medicine of the Babylonians and Assyrians."

Oral Surgery or Dentistry.—On April 12 a case of great importance to the profession was concluded before Judge Olson, chief justice of the Municipal Court. The Dental Board of Illinois caused the arrest of Dr. William A. Lurie on the charge of practicing dentistry without a license. The attorney-general contended that a physician has no right to treat diseases of the jaw under the provision of the dentistry act. After a partial hearing of the case of the state, the judge indicated that the prosecution which arose from the treatment by Dr. Lurie of a case of antrum and jaw infection could not be sustained, and the state thereupon nonsuited. Dr. Lurie was represented by Attorney Robert J. Folonie, acting for the Chicago Medical Society and the Illinois State Medical Society.

KANSAS

Hospital Association to Meet.—The annual meeting of the Kansas Hospital Association will be held in Salina, May 1, under the presidency of Dr. Samuel Murdock, Jr., Sabetha.

Speed at Topeka.—Dr. Kellogg Speed, Chicago, who has recently returned from the western war front in France, delivered an address before the Shawnee County Medical Society, at Topeka, April 2.

MAINE

Department of Health Created.—The Maine legislature, prior to its adjournment, April 7, enacted a law creating a state department of health and providing a health commissioner with a visiting council appointed by the governor, and a council commissioner for a term of six years, removable for cause only. The commissioner is empowered to appoint three or more district commissioners, responsible to, and paid by, him.——The bill creating a board for the registration of osteopaths failed to pass.

MARYLAND

Sexton Transfers.—Dr. Lewis A. Sexton, Baltimore, for several years chief of the dispensary clinic of Johns Hopkins Hospital, has resigned to accept the position of superintendent of the Hartford (Conn.) Hospital.

NEW JERSEY

Memorial Tablet Erected.—In memory of the late Dr. Henry G. Taylor, for twenty-six years visiting physician to the Cooper Hospital, Camden, a tablet has been placed in the central corridor of the main building of the institution.

Personal.—Dr. Daniel J. Donohue, Jersey City, sustained a fracture of the skull and other injuries when the steering gear of his car broke, while he was answering an emergency call, March 30.——Dr. Thomas B. Lee, Camden, has been appointed a member of the state board of health.

NEW YORK

New Queens Hospital.—The Queensborough General Hospital has been organized to take over the Jamaica Hospital. Option on a site just north of Jamaica has been secured, and a campaign to raise $250,000 has been started. Tentative plans provide for a building with 200 rooms on a plot large enough to permit of the construction of additional wings as required.

State Medical Society Meeting.—The annual meeting of the Medical Society of the State of New York will be held in Utica, April 24 to 27, with headquarters at the State Armory, Rutgar and Struben streets. Section meeting places are at the New Century Auditorium, Cope Memorial Church, Park Baptist Church, Park Baptist Chapter, and two sections will meet in the parlors at the Armory.

Personal.—Major H. Judson Lipes, Albany, Capt. Henry B. Gillen, Cohoes, and Eugene F. Connally, Troy, all assigned to the Second Infantry, have resigned from the Medical Corps. ——Lieut. Homer H. Oaksford, Gloversville, has been commissioned Major, M. C., N. Y. N. G., and assigned Second Infantry.——Dr. George H. Houghton, Albany, has been transferred to the Second Infantry.——Dr. Samuel A. Munford, Ithaca, has resigned as medical advisor of Cornell University to accept a position in the Clifton Springs Sanitarium.

New York City

Many Years a Typhoid Carrier.—The New York Health Department reports a typhoid carrier just discovered, a woman, 76 years of age, who had typhoid fever forty-nine years ago.

The Work of the Bacteriologic Laboratory.—During the past year there were submitted to the Municipal Bacteriologic Laboratory 215,341 cultures for contagious diseases, and each of the four bacteriologists averaged 141 tests a day, including Sundays and holidays.

Gift of Milk for Schoolchildren.—The Clover Farms, Inc., and the Sheffield Farms-Slawson-Decker Company have donated to the Bureau of Child Hygiene 500 books of 30-quart coupons each. These books will be distributed to schoolchildren needing additional nourishment.

Dentist to Care for Teeth of Tuberculous Children.—The Jewish Aid Society of Brooklyn has arranged for dental work for the child patients of the Tuberculosis Day Camp at Rutherford. Patients whose sputum contains tubercle bacilli are to be treated separately and not in a public dental clinic.

Health Survey of Chelsea District.—The Chelsea Neighborhood Association, in cooperation with the Metropolitan Life Insurance Company, has undertaken a survey of the district from Fourteenth to Forty-Second streets, and from Fifth Avenue to the Hudson River, including a population of about 180,000 people. The census is to be taken the end of April.

Mosquito and Fly Week.—Members of the Interstate Mosquito Committee met recently under the chairmanship of Dr. Haven Emerson in order to discuss plans for fighting mosquitoes and flies this summer. It was decided to hold a mosquito and fly week, beginning May 28, during which an education campaign will be conducted against the mosquito and the fly.

Oral Hygiene Week.—The health department, the department of education and the First and Second District Dental societies have inaugurated a city-wide educational campaign on oral hygiene during the week of May 13. A large part of the work will be carried on in schools, the dental societies having agreed to furnish a lecturer for every school in the city. In addition prizes will be given for posters, for a slogan, and for the best set of teeth in each school.

Examination for Pathologist.—The Municipal Civil Service Commission announces that it will receive applications from April 11 to April 25 for the position of pathologist. The examination will be competitive and open to all citizens of the United States. Candidates must be graduates in medicine from approved institutions, at least 21 years of age, and must pass the required examination. The compensation rates proposed by the board for this position range from $1,740 to $2,100.

Instruction for Mosquito Fighters.—The Brooklyn Institute of Arts and Sciences announces a course of instruction designed to train persons for practical work in the elimination of mosquitoes and flies. The course is to be given at the Biological Laboratory, Cold Harbor Springs, L. I., beginning July 5, and continuing six weeks. The course includes surveys and mapping, identification of species, life history of the different species of mosquitoes and flies, and specifications for treatment and elimination. Further information regarding this course may be had by addressing Dr. Charles B. Davenport, Cold Harbor Springs, L. I., N. Y.

Medical Consultant Wanted for Law Department.—The Municipal Civil Service Commission announces that applications will be received up to 4 p. m., April 24, for the position of medical consultant, law department. A qualifying physical examination will be given; candidates must have had ten years' general practice of medicine, or five years' general practice of medicine and five years of hospital operating work. They must have had extended experience in physical examination of a nature tending to qualify them for the duties of the position. The duties of the position are to act when required as medical consultant to the corporation coun-

cil, namely in connection with claims and actions against the city for damages for personal injuries. Applicants must be at least 35 years of age. The compensation is $6,000 annually, and full time service is not required.

OHIO

Physicians to Fill Pulpits.—On Sunday, May 13, preceding the opening of the annual session of the Ohio State Medical Association at Springfield, the pulpits of that city will be filled by out-of-town physicians, who will deliver addresses on subjects connected with public health.

Eugenic Marriage Bill Passes Senate.—The Ohio State Senate, March 22, passed a bill requiring male applicants for marriage licenses to undergo a physical examination and present a certificate of good health, and providing that divorced men cannot remarry within six months after divorce.

Personal.—Dr. William Pennell, Mount Vernon, is critically ill at Bethesda Hospital, Cincinnati.——Dr. Henry Houton, formerly of Upper Arlington, dean of the Harvard School in China, has arrived in San Francisco, from Shanghai.——Dr. Morton W. Bland, Bellevue, state registrar of vital statistics, has resigned.

Cancer Campaign.—The cancer committee of the Ohio State Medical Society has arranged with the *Ohio State Medical Journal* to devote the May number to cancer problems. These problems will be discussed at the meeting of the Ohio State Medical Association at Springfield, in May. An educational campaign will also be inaugurated among physicians, nurses and the public.

PENNSYLVANIA

Philadelphia

Personal.—Dr. Edward T. Reichert, professor of physiology at the University of Pennsylvania, has offered to the government his 50-foot sea-going yacht *Fortuna 3rd.*

Rose Cold and Hay-Fever Dispensary.—The Samaritan Hospital has opened a dispensary for the diagnosis and treatment of persons suffering with rose cold and hay-fever under the department of Dr. William Egbert Robertson. The dispensary work will be in charge of Dr. Claude P. Brown, Glen Olden, and the dispensary hour will be Tuesday, 7:30 to 8:30 p. m., beginning April 17.

Obstetric Fellowship Established.—The Women's Medical College of Pennsylvania, Philadelphia, has established an obstetric fellowship amounting to $1,000, to be awarded annually to any medical woman of especial ability who, following the undergraduate course, has completed at least one year of hospital service, including work in the maternity wards, and one year of further practice. The amount is to cover twelve months of special work as fellow in obstetrics, with the condition that the holder of the fellowship shall thereafter continue the practice of this specialty.

Pupils Aid in War on Flies.—Dr. John P. Garber, superintendent of public schools, and Dr. Walter S. Cornell, director of school medical inspection, have given their support to the Cooperative Committee for Fly Extermination in its efforts against the house fly. Letters signed by both Dr. Garber and Dr. Cornell are being distributed through the public schools directing the work, and a call has been issued for volunteer inspectors who will hunt for breeding places of the insect and direct the proper disinfection. Letters sent out last week containing circulars directing the extermination of the fly brought many replies not only from superintendents of hospitals but from hotel managers, restaurant and boarding house proprietors, all endorsing the movement and promising the fullest cooperation.

TENNESSEE

Personal.—Dr. Louis Frank, Louisville, Ky., spoke before the Memphis and Shelby County Medical Society, at its meeting, March 20, on "Safety Factors in Prostatic Surgery." The address was illustrated by lantern slides.——Dr. Arthur G. Kelley, Memphis, has moved to New York.

Cornerstone Laid.—The cornerstone of the new anatomic hall at Meharry College, Nashville, was laid, March 23. The president of the college, Dr. George W. Hubbard, was master of ceremonies, and the principal address was delivered by Bishop Frank M. Bristol of the Methodist Episcopal Church. The new building will be completed in time for use in the term which opens in the autumn.

County Society Regulates Hospital.—The Memphis-Shelby County Medical Society early in March adopted resolutions for the regulation of hospitals in Memphis, demanding that each hospital appoint a board of medical advisers; that it maintain an efficient method of filing and indexing histories; that it require each member of its attending staff to leave in the hospital a record of each case, and that it require all physicians sending patients to or operating on them in the hospital to live up to the professional requirements of the society. It also demanded that each hospital create a laboratory fund from the fees paid for laboratory examinations of all kinds at a rate to be determined by the hospital and the pathologist, such fund to be expended only on the laboratory; that there should be in each laboratory a full time technician, and that each intern be required to serve at least two months in the laboratory. In accordance with this action, St. Joseph's Hospital has notified the local members of the profession that all pay patients will be charged an additional $2 on admission for laboratory examinations, and that all tissue removed at operation is the property of the hospital, and will form a part of the operation record, but that charity patients will receive any laboratory services which may be necessary.

State Society Meeting.—The eighty-fourth annual meeting of the Tennessee State Medical Association was held in Nashville, April 3 to 5, under the presidency of Dr. Charles N. Cowden, Nashville. The following officers were elected: president, Dr. Edward T. Newell, Chattanooga; vice presidents, for Eastern Tennessee, Dr. Henry M. Cass, Johnson City; for Middle Tennessee, Dr. Thomas G. Pollard, Nashville, and for Western Tennessee, Dr. William O. Sullivan, Newbern; treasurer, Dr. Joseph F. H. Gallagher, Nashville (reelected); secretary, Dr. Olin West, Nashville (reelected); delegate to the American Medical Association, Dr. Andrew F. Richards, Sparta; alternate, Dr. William Britt Burns, Memphis, and councilors, Drs. Samuel R. Miller, Knoxville, Zeb L. Shipley, Cookeville; William C. Dixon, Nashville; Alexander B. Dancy, Jackson, and William T. Black, Memphis.——The section on ophthalmology and oto-laryngology at its final session elected Dr. Richmond McKinney, Memphis, president, and Dr. William W. Potter, Knoxville, secretary.——At the annual banquet of the association, April 4, Dr. John A. Witherspoon, Nashville, made an eloquent appeal to the association to support the government in the present war crisis, and resolutions were adopted pledging the service of the members to the United States in case of war.

UTAH

State Medical Board Organized.—The new State Medical Board met at Salt Lake City, April 7, and organized, electing Dr. David C. Budge, Logan, president; Dr. Fred W. Taylor, Provo, vice president; Dr. Walter M. Stookey, Salt Lake City, secretary-treasurer, and Dr. George F. Harding, corresponding secretary. The two new members of the board are Drs. Harry N. Mayo, Salt Lake City, and John R. A. Whitlock, Tremonton.

New Staff Begins Work.—The new staff of the Salt Lake County Hospital for the quarter beginning April 1 is as follows: surgery, Dr. George W. Middleton; orthopedic surgery, Dr. Samuel C. Baldwin; internal medicine, Dr. William H. Rothwell, Murray; diseases of the eye, ear and throat, Dr. Leslie W. Snow; diseases of children, Dr. Charles E. Carter; diseases of the kidney and bladder, Dr. Francis A. Goeltz; diseases of the skin, Dr. William L. Rich, and pathology, Dr. George F. Roberts.

VIRGINIA

Faculty Changes.—At the meeting of the faculty of the Medical College of Virginia, Richmond, March 28, Dr. Hugh M. Taylor resigned as professor of clinical surgery and was elected emeritus professor; Dr. William L. Peple was elected professor of clinical surgery; Dr. L. Schuyler B. Moon, acting professor of pathology, was elected professor of pathology, and Dr. Edgar C. L. Miller was reelected professor of bacteriology and physiologic chemistry.

Personal.—Dr. Robert J. Payne, Fredericksburg, has been appointed a member of the board of visitors of the Medical College of Virginia, Richmond, succeeding Dr. Joseph N. Barney, who resigned to accept an appointment in the Medical Reserve Corps, U. S. Army.——Dr. Stuart McGuire, Richmond, has been appointed a member of the board of visitors of the Medical College of Virginia, Richmond, succeeding Dr. Robert C. Randolph, resigned.——Dr. Ernest C. Levy has resigned as chief health officer of Richmond to accept a position with the North Public Health Bureau, New York.——Dr. Roy K. Flannagan, Richmond, has been appointed city health officer of Richmond.——Dr. B. Lawrence Taliferro, Catawba

Sanatorium, has been appointed medical director of the Piedmont Sanatorium.

Hospital News.—The people of Abingdon will erect a hospital as a monument to the late Dr. George Ben Johnston, Richmond, to be known as the George Ben Johnston Memorial Hospital. In an eight-day campaign to raise funds for this purpose, $30,000 was subscribed.——The Chesapeake and Ohio Railway Company has opened a new hospital at Clifton Forge. The building cost $70,000, and is under the charge of Dr. Benjamin B. Wheeler.——More than $112,000 of the $150,000 required for the building fund for the Retreat for the Sick, Richmond, had already been subscribed, April 1.——Mrs. Henry B. Gilpin of Baltimore and Scaleby Manor, Clarke County, will erect and equip, at an expense of $10,000, a large children's department at the Winchester Memorial Hospital.

WASHINGTON

Personal.—Dr. William A. Shannon, Seattle, has been reappointed a member of the board of regents of the University of Washington for a six-year term.——Dr. John B. Anderson has been reelected city health officer of Spokane.——In the damage suit brought by Dr. L. Maud Parker, Seattle, against the Northwest Motor Company for injuries alleged to have resulted from an automobile collision in October, 1915, and for which $51,000 was claimed, the jury brought in a verdict for the defendant, April 6.

Graduate Medical Course.—A graduate medical course will be conducted at the new St. Luke's Hospital, Spokane, during the summer. Among those who have announced their acceptance of positions as instructors are: Drs. W. T. Councilman, Harvey Cushing, Walter B. Cannon, Fritz B. Talbot, James S. Stone, George Holmes, David L. Edsall and Francis W. Peabody, Boston; William G. MacCallum and Warfield T. Longcope, New York; Lewellys F. Barker and Theodore C. Janeway, Baltimore, and Rollin T. Woodyatt, Ludvig Hektoen and Harry G. Wells, Chicago.

CANADA

First Aid for Injured Workmen.—An amendment to the Workmen's Compensation Act of Ontario provides for first aid to injured workmen. This will continue for thirty days after the injury. No specific amount is named, but it will be paid out of the accident fund.

Personal.—Surg.-Gen. Guy Carleton Jones, Ottawa, Ont., has arrived in Halifax.——Gen. John T. Fotheringham, C. M. G., Toronto, has been invited to deliver the Cavendish address before the London Medico-Chirurgical Society in June.——Major E. Stanley Ryerson, Toronto, who was with the University of Toronto Base Hospital at Saloniki, but who returned to Toronto a short time ago, has been appointed A. D. M. S., Toronto Military District, in succession to Col. Frederick W. Marlow, resigned. Major Ryerson will have the temporary rank of lieutenant-colonel.——Capt. James G. Bruce of the C. A. M. C. has recently returned to Toronto on furlough.

GENERAL

Pediatrists to Meet.—The American Pediatric Society will hold its twenty-ninth annual meeting at the Greenbrier, White Sulphur Springs, W. Va., May 28 to 30, under the presidency of Dr. Frank S. Churchill, Chicago.

Confederate Surgeons to Meet.—The twentieth annual meeting of the Association of Medical Officers of the Army and Navy of the Confederate States will be held in the New Willard Hotel, Washington, June 4 to 8. The meeting will be held concurrently with the general reunion of the United Confederate Veterans.

Alienists and Neurologists to Meet.—The annual meeting of alienists and neurologists will be held, July 9 to 12, in the Red Room of the Hotel LaSalle, under the auspices of the Chicago Medical Society. Dr. George A. Zeller, Springfield, Ill., will act as chairman, and Dr. Bayard Holmes, Chicago, as secretary of the meeting.

Immunologists Elect Officers.—At the annual meeting of the American Association of Immunologists, held in New York, April 6 and 7, Dr. John A. Kolmer, Philadelphia, was elected president; Dr. Martin J. Synnott, Montclair, N. J., secretary, and Dr. Willard J. Stone, Toledo, Ohio, treasurer. The new council is composed of the officers and Drs. Richard Weil, Arthur F. Coca, and William H. Park, New York, and Dr. A. Parker Hitchens, Glen Olden, Pa. The next meeting will be held in Minneapolis in April, 1918.

State Health Officers to Meet in Washington.—The annual conference of state health officers with the surgeon-general of the United States Public Health Service has been called to meet in Washington, D. C., April 30 and May 1. Immediately following the adjournment of this official conference, the Conference of State and Provincial Boards of Health of North America will meet and remain in session two days. In the latter body various Canadian provinces are represented, and are expected to have their health officers present. The leading topic before both conferences will be the coordination of existing federal, state and city health agencies with particular reference to increased efficiency during the war.

Conference of Charities and Correction.—The forty-fourth annual National Conference of Charities and Correction will be held at Pittsburgh, June 6 to 13, under the presidency of Frederick Almy, Buffalo. The conference sessions will include a general open meeting at which the presidential address will be delivered; a religious service on Sunday at which the annual sermon will be preached by Bishop Williams of Michigan, and on Saturday the general business session of the conference will be held. The work of the conference will be under the following general divisions: children, community programs, correction, the family and the community, health, mental hygiene, public charities, rural social problems and social insurance.

McIntire Prizes.—The American Academy of Medicine, in appreciative commemoration of the work of Dr. Charles McIntire, Easton, Pa., secretary of the academy for twenty-five years, announces that it will give two prizes to be awarded at the annual meetings in 1918 and 1921, respectively. The subject for 1918 is "The Principles Governing the Physicians' Compensation in the Various Forms of Social Insurance." The committee to award this prize is composed of Drs. John L. Heffron of the Syracuse (N. Y.) College of Medicine; Reuben Peterson of the University of Michigan, Ann Arbor, and John Staige Davis of the University of Virginia, Charlottesville. The subject for 1921 is "What Effect has Child Labor on the Growth of the Body," and the committee to award this prize is composed of Drs. Thomas S. Arbuthnot, University of Pittsburgh; Winfield Scott Hall of Northwestern University, Chicago, and James C. Wilson of Jefferson Medical College, Philadelphia.

The Statistics of Blindness.—The forthcoming report from the Bureau of the Census on blindness in the United States indicates that 30.8 per cent. of the blind population lost their sight when less than 20 years of age; 7.4 per cent. during the early and middle years of adult life (from 20 to 64 years); and 21.8 per cent. after passing 65 years of age. The greatest loss of sight, by periods of five years, occurred in the first period of life. These figures are based on information from 29,242 blind persons of the 57,272 to whom schedules were sent by the census bureau. There has been a marked decrease since 1880 in the proportion of blind who lose their sight in infancy. This decrease is to be explained in great measure by the increased use of the Credé method of prophylaxis for ophthalmia neonatorum. The proportion of blind who lost their sight during the early or middle years of adult life has increased since 1880 and this increase is probably due in part to the great industrial growth of the United States during the last thirty years, with its natural increase in blindness due to occupational injuries and diseases.

Interstate Quarantine Regulations to Cover Construction Camps and the Oyster Industry.—By an amendment to the interstate quarantine regulations, recently promulgated by the secretary of the treasury, persons maintaining camps for migratory workers are required to keep such camps in a proper sanitary condition, to take measures to keep such camps free from vermin, and to exercise such other precautions as may be necessary to prevent the interstate spread of disease. The surgeon-general of the United States Public Health Service is authorized to make such inspections as may be necessary. Common carriers are forbidden to accept oysters, clams, or other shellfish which have been grown, fattened, or handled in such a way as to be agents in the spread of disease. The surgeon-general of the United States Public Health Service is directed to inspect beds used for growing or fattening oysters, clams, or other shellfish, and shucking houses and similar places where they are prepared for shipment, and to forbid their shipment if they are produced or handled so as to be agents for the spread of disease.

Civil Service Examinations.—The United States Civil Service Commission announces an open competitive examination for assistant curator, division of medicine (male), to be held

May 2, to fill a vacancy in the National Museum, Washington, D. C., at a salary ranging from $1,500 to $1,800 a year, and future similar vacancies. The duties of the position include the identification, classification and labeling of specimens exemplifying the history of medicine, materia medica, pharmacy and public hygiene, and the planning and installing of exhibits illustrating these groups. Competitors will be examined in botany, materia medica, pharmaceutical chemistry and history of medicine. Applicants must be less than 40 years of age, must be graduates of a school of medicine or pharmacy, and should apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C., or to the secretary of any United States Civil Service Board. A second examination is for medical intern, St. Elizabeth's Hospital, Washington, D. C., to be held June 6, 1917. This examination will be for both men and women, to fill a vacancy at $900 a year with maintenance. For the existing vacancy males are eligible. Applicants must be graduates of reputable medical colleges or senior students in such institutions, must be unmarried and 20 years of age or over. Applicants should apply for Form 1312, stating the title of the examination to the Civil Service Commission, Washington, D. C., or the secretary of any United States Civil Service Board.

FOREIGN

Bubonic Plague in England.—News of the appearance of bubonic plague at Liverpool, England, was contained in a special order of the quarantine department of the port of New York to subject all vessels excepting passenger ships from Liverpool to fumigation at the end of their voyage for the destruction of rats, and that they shall comply with the plague regulations of the port.

Joint Meeting of Philippine Medical Associations.—The Philippine Island Medical Association has been invited by the Colegio Medico Farmaceutico de Filipinas to hold its annual scientific session jointly with their organization. The council of the Philippine Island Medical Association is strongly in favor of holding such a joint session. The Colegio is a very active organization both socially and scientifically, and the Filipino physicians take much interest in the organization.

Quacks at Havana.—The *Vida Nueva* of Havana remarks that it is truly alarming the increasing number of charlatans practicing in the capital of the Republic of Cuba. The newspapers carry the advertisements of dozens of them who offer moral and physical treatment for every kind of disease. It adds: "Some of them practice medicine, as is well known, without possessing the most rudimentary knowledge of this difficult science. It would be well if the medical authorities would come to some effectual decision as to the matter for conditions are graver even than appears on the surface. It is necessary to combat this evil, because every one knows that the ignorant are inclined to put themselves in the hands of quacks, who exploit their ignorance."

Max Nordau Interned at Madrid.—Dr. Max Nordau, author of several satirical arraignments of our civilization, long Paris correspondent of the Vienna *Neue Freie Presse*, has been interned at Madrid for some time. He was admitted to the practice of medicine in 1882. The Surgeon-General's Catalogue states that his real name is Südfeld, Nordau being a free translation, "North meadow" for "South field." His best known work is "Conventional Lies of Our Civilization," in which he included "Gottesgnadenthum" as one of the most colossal lies. This made it necessary for him to live outside of Teutonic countries, and he made Paris his home. When the war began, he had to leave France as well. The *Siglo Medico* gives a recent interview with him in which he discussed Semmelweis' use of chlorin in disinfection in 1847.

Deaths in the Profession Abroad.—A. Combe, professor of pediatrics at the University of Lausanne, Switzerland, aged 68.——**J. Brault,** professor of the diseases of tropical countries and of skin diseases and syphilis at the University of Alger, in Algiers, Africa, and author of numerous monographs on these subjects, aged 55.——**F. Massei,** professor of affections of the ear, nose and throat at the University of Naples, aged 70. He founded in 1881 the *Archivio Italiano di Laringologia* which he called "La nostra carta di visita," and in which he constantly reiterated the principle that the specialties must beware of becoming closed circles but must always clasp hands with general clinical medicine. He has long been the leader in otorhinolaryngology in Italy and represented his specialty in the international medical congresses. He has a record of over 500 tumors of the larynx successfully removed by the natural route.

LONDON LETTER

LONDON, March 26, 1917.

The Waste of War

Mr. Barnes, the pensions minister, described in Parliament the measures taken to deal with the disabled of the war and their dependents, which have already reached a huge total. The numbers at present are: disabled men, 157,544; widows, 62,796; children of those widows, 128,294; dependents of deceased men, 29,832; widows who have not reached the pension stage, about 125,000; men in hospitals, about 65,000; medically unfit, about 65,000, or a total of 673,741 men, women and children. In regard to eligibility the distinction drawn between disease attributable to military service and aggravated by it will be abolished. In future if a man's disease is aggravated by the war he will get his pension just the same as though it is caused by the war. Formerly he received only a single sum in the form of a gratuity. It is proposed to give a man a flat rate pension irrespective altogether of his earnings or earning capacity. In addition to the flat rate pension in respect of which no inquiry will be made about earnings or earning capacity, a man will have an alternative pension on cause being shown, and that will be based on his earnings before the war; but in the assessment of it regard will be had to his earning capacity. In addition, there will be allowances. A man in need of constant attendance will have $4 a week allotted to him for his wife or other person to look after him. After dealing with the pensions of men only partly disabled, Mr. Barnes made two novel suggestions in regard to treatment and training. With regard to treatment a man may be fined if he does not conform to the recommendations of his physician. As to training, the intention is to attract a man to it by additional inducements. He will be given a full pension; fees will be paid for him; his wife will have a full separation allowance, and so on; and, in addition, for the period during which he undergoes training for a new occupation he will be given $1.25 a week as a bonus at the end of the period. The case of a man under 20 per cent. disability will be dealt with by way of a gratuity or temporary allowance, and the provisions mentioned do not apply to such a man. The scheme in its entirety, according to the actuary's report, will involve a capital charge of $1,980,000,000, and in the first year $125,000,000. In addition to this there are what are called "the medical unfit," who number over 100,000. These men were passed into the army owing to the great pressure at which physicians had to work in the early days. Hundreds of them have passed into the army who should never have been passed, veritable weeds that ought never to have been there at all. Some of them concealed their ailments when they were examined, and thousands of them did not do more than two or three days' service. But, allowing for all that, the state must assume some responsibility, because the physician had passed them. But the measure of responsibility is by no means anything like a pension for their lives. What is proposed is to put them back where the state found them. In exceptional cases, where a man's disease had been accelerated by the war, there will be a gratuity of $500. The great bulk of them will be disposed of by a small gratuity according to a scale which has been drawn up.

Deaths Due to Wild Animals in India

A large number of deaths is caused annually in India by wild animals. During the year ended June 30, 1916, 26,385 persons died in India from snake bite, an increase of 3,700 over the previous year. Over 2,000 more deaths were caused by elephants, tigers and other animals. During the past five years, elephants, tigers and other animals have killed 9,192 people in British India, and of these tigers have claimed a total of 3,682. In the same period, 116,828 persons have died as the result of snake bites. In the United Provinces, one man-eating tiger in the Almora district killed ten persons out of the provincial total of twenty. In order to effect the destruction of as many wild animals and snakes as possible, the government pays bounties. The number of animals destroyed in 1915 was 25,036, including 1,582 tigers, 6,623 leopards, 2,775 bears and 2,191 wolves. The total number of snakes killed was 184,663.

Cocain and Unqualified Dentists

A regulation was made last July forbidding the sale of cocain except to authorized persons, in consequence of the existence of the cocain habit among soldiers in the London area. An outcry was then raised by unqualified dentists, and a temporary permit was issued under which they could pur-

chase cocain preparations not exceeding 1 per cent. strength. In November the home secretary appointed a committee to consider the authorizations granted for the use of cocain in dentistry, and to advise whether or not they should be continued or modified, and, if continued, in what cases and with what conditions. The committee has now reported. The majority (consisting of laymen) proposes that persons practicing bona fide as unqualified dental practitioners shall be entitled to apply for registration for right to purchase preparations of cocain containing not more than 1 per cent. The committee makes these recommendations for two reasons. It holds that to prohibit unqualified dental practitioners from using cocain would be inconvenient to them, since they have not the requisite skill in the use of novocain, and, secondly, that there is no evidence "to show that there is any serious or perhaps even noticeable prevalence of the cocain habit among the civilian or military population." Bayliss, the physiologist, the only medical member of the committee, differs from the other members. He is convinced that the use of cocain is not necessary for any dental operation, and that its place can be taken by novocain without inflicting any hardship on the dentist. Unqualified dentists have laid stress on the alleged necessity of adding epinephrin to the novocain solution, and it seems that in some cases more was added than was necessary. Bayliss thinks that the injurious results may have been due rather to the septic state of the mouth, and that no local anesthetic whatever ought to have been used. He criticizes the arrangements under which unqualified dentists can obtain cocain. There are 13,000 persons engaged in the practice of dentistry, of whom only about 5,000 are qualified. Bayliss holds that it would be a mistake to give the unqualified dentists official recognition when the scarcity of qualified practitioners would be more effectively met by raising the status of the dental profession as a whole. His conclusion is that since the sale of cocain is attended with serious risks to the community and is unnecessary in dentistry, the permit issued to unregistered dentists to obtain preparations of cocain should not be continued.

Cancer Mortality

For the first time the mortality from cancer has overtaken that from consumption in this country. This startling fact is revealed in the annual report of the Society for the Prevention and Relief of Cancer. At the present time, in England and Wales, 40,000 persons die annually from the scourge. A warning is given in the report regarding the effects of the war, as cancer frequently develops at the site of a former scar or wound. Whatever the underlying cause of the malady may be, the lamentable fact remains that as a result of the present unparalleled warfare, we shall have to face in the near future a most serious increase in malignant growths in men, especially the men who have served their country in the field.

PARIS LETTER

PARIS, March 22, 1917.

The War

STRICTER SANITARY MEASURES TO BE ADOPTED ON CALLING TO THE COLORS THE MEN OF THE "1918" CLASS

Because of the youth of the recruits of the "1918" class, which are the next to be called into service, Justin Godart, undersecretary of state and head of the military health service, has deemed it proper to direct particular attention to their bedding, clothing, food, to the health conditions of the districts in which they will be assembled, to the proper course of their military instruction, and to the development of their military spirit. The undersecretary has ordered that the barracks reserved for these recruits be selected from among the best, and that they be evacuated sufficiently long before their occupation by the "1918" class to permit of carrying out proper hygienic measures, such as fumigation, whitewashing of the walls and cleaning the floors with antiseptics. The director of the sanitary service and his assistants are to pay a personal visit to the barracks in every district, in order that all the buildings, without exception, which are to be occupied by any contingent of the "1918" class, may be examined from the standpoint of general hygiene and with a view to prevent the outbreak of epidemic diseases. This investigation must be completed by March 30. A formal prohibitive order will be issued forbidding the drying in sleeping rooms of damp clothing and linen, on the ground that the humidity resulting from this practice may cause sore throat and bronchitis. Drying rooms, specially heated, will be provided in all the barracks. Shower baths will be installed where they are lacking, and those already existing will be put in good order. Every soldier will be required to take a shower bath once a week. So far as food is concerned, the meat ration will be 400 gm., but during the first three months after the call the meat ration will be 450 gm. With the beginning of systematic instruction, just before the morning drill, hot coffee, together with a cold or warm sandwich, will be served, and hot drinks will be furnished during the day whenever the weather conditions seem to require it.

STERILIZATION OF INSTRUMENTS BY FORMALDEHYD VAPOR

Since the beginning of the war Chevassu has employed formaldehyd vapor to sterilize his instruments. This sterilization is effected in a very simple manner by producing a formaldehyd vapor bath in the box containing the instruments. The procedure consists in placing in the regular metallic box or sterilizer, or in any other kind of sterilizer, two little bags, each containing four trioxymethylene pastils. In the surgical automobile ambulance, of which Chevassu is director, sterilization was accomplished by placing the boxes in a linen-drier to which is attached a thermometer. The temperature must not exceed 55 C. At 50 C. sterilization requires only twenty minutes, which is certainly very rapid, and as it will not affect the instruments in any way, it is recommended particularly for the sterilization incident to the performance of many operations, as in a surgical automobile ambulance. If a linen-drier is not at hand, the metallic box may be placed on two bricks laid on a stove, or in summer the sun will suffice to bring about sterilization. The method is so simple that, now that it has given superabundant proof of its value, it seems bound to become the ideal method of sterilization for all of the sanitary divisions of the army, and after the war is over it is certain to be the chosen method of the general practitioner.

WORKSHOP FOR BLIND SOLDIERS

A new movement is being launched for the purpose of creating industrial workshops for blind soldiers. They will supplement workshops of reeducation referred to in a previous letter (THE JOURNAL, March 18, 1916, p. 905). The responsible parties of this movement are not only philanthropists, but also commercial and industrial societies. One of these workshops will be given over to the manufacture of automobile and aeroplane motors; it will be opened soon. This work has been conceived in a practical spirit, and is expected to yield good results. The blind, themselves, will participate in all the benefits of the enterprise in the proportion of 95 per cent., which will be added to their salary. The industrial side of the movement is taken care of by one philanthropic association which proposes to lodge the unmarried blind workers coming from regions invaded by the enemy, and to look after their material welfare, besides forming little reunions, circles or groups to look after the intellectual welfare of the blind. This movement will be known as "the trades of the blind soldiers."

Reduction in Size of Medical Bulletin

For economic reasons it has become necessary to reduce the number of editions and pages of the daily newspapers. For the same reasons, the *Bulletin de la Société médicale des hôpitaux de Paris* will put into effect after March 15 the following rules: The regular members of the society will not be permitted to use more than four pages of the bulletin for their communications and presentations (illustrations excluded); corresponding members and nonmembers will not be permitted to use more than two pages, but all may occasionally make use of two additional pages at their own expense, paying the society 5 francs ($1) per page.

Treatment of Malaria by Arsenic and Quinin

Ravaut and de Kerdrel have reported the excellent results which they have obtained from treating malaria with a mixture of arsenic and quinin. Starting with the knowledge gained from the study of syphilis and amebic dysentery, they show that the parasites causing these three diseases are possessed of common characters. They are the parasites which are encysted deeply in the organism. These chronic maladies are characterized by acute exacerbations, the result of the multiplication of these parasites and their dissemination throughout the body. So far as the treatment is concerned, it must be methodical, and given in series. The combination of arsenic and quinin enhances greatly the efficacy of either agent alone. The treatment consists of ten intravenous injections of neosalvarsan from 0.15 gm. to 0.30 gm., repeated every third day. In the interval between the injections,

quinin is administered intravenously or by mouth. Ravaut and de Kerdrel were able to effect a cure in fifty-three cases in which all other methods of treatment had failed. They have also obtained good results in the treatment of malarial hematuria and gastric hemorrhages of malarial origin. At the same time, the general condition of the patient was greatly improved.

Recurrence of Mumps

According to Florand, the recurrence of mumps, less rare than one would believe, is common in certain countries. He made this observation in the contagious service of the Val-de-Grâce Hospital, where a number of Annamites were treated for the third and even the fourth attack of mumps. Unless there was a complicating orchitis, the condition was usually benign, and nearly always apyretic.

Movement to Raise the Birth Rate

The league "Pour la vie" proposes to exert itself to the utmost to raise the birth rate in France. It takes as its task the arousing of public opinion on the necessity of revising civil, political, administrative and fiscal legislation.

Association News

THE NEW YORK SESSION

Railroad Rates Announcement

Those who are going to New York for the Annual Session are urged to consult the local ticket agent at their home town for complete information regarding fares, time limits, extentions and stop-over privileges available in making the trip. There is on file in every ticket office the traffic schedule which officially informs local agents of the rates from that point. Fellows should not leave the determination of the route desired until just before they are ready to start on the trip. Local ticket agents may have to obtain special tickets for these excursions from central points, and they must be arranged in time so that the tickets may be purchased when the journey is begun. These agents will also be able to give information concerning circuit routes which will permit making whatever side trips may be desired in connection with the journey to or from New York. Those from Chicago, St. Louis and the West may purchase short limit summer tourist tickets, which will be on sale to New York City, commencing June 1, at lower fare and with more liberal limit and stop-over privileges than apply in connection with reduced fares authorized for conventions. Round trip circle tour tickets, going one route and returning another, are available, sale commencing May 15, to New York and to Boston, in one direction via New York with a choice of many routes: through Niagara Falls, Montreal, Washington, D. C., Baltimore, and Norfolk, Va., including rail and water trips if desired.

The following railroad rates are reported:

CENTRAL PASSENGER ASSOCIATION: Two cents per mile in each direction, but in no case more than summer tourist fares. Signature form of tickets will be sold June 3, 4 and 5, final return limit to reach the original starting point not later than midnight, June 12. A joint tariff authorizing fares for the annual session of the Association from points in the Central Passenger Association territory is now being compiled.

THE TRUNK LINE ASSOCIATION: This serves most of New York, Pennsylvania, New Jersey, Delaware, Maryland and West Virginia, also a part of Virginia, and announces that there will be available for those attending the coming session of the American Medical Association a railroad rate of 2 cents per mile in each direction with a minimum of $1 for the round trip on the certificate plan, going and returning via same route, only. Going tickets in connection with certificates to be sold June 3, 4 and 5 at one-way fares applicable to New York City on the certificate plan. These certificates must be obtained from the ticket agent at the starting point (or nearest station issuing through tickets to New York City) and to be valid for the reduced fares returning, must be endorsed by the secretary of the American Medical Association, indicating that the holder has been in attendance at the meeting and is entitled to the reduction, and must also be validated by a special agent on either June 5, 6 or 7. Return tickets will be sold on presentation of validated certificates June 5-11 at the difference between the fares paid on the going trip and the fares for the round trip; these latter tickets to be limited to continuous passage to destination, which must be reached in no case later than on June 12. No fee will be required for the validation of certificates.

WESTERN PASSENGER ASSOCIATION AND SOUTHWESTERN PASSENGER ASSOCIATION: The members of the Western Passenger Association and Southwestern Passenger Association have not announced any reduced fares; but commencing June 1, 1917, round-trip summer tickets will be on sale to New York from points in the territory of those associations, at lower fares and with more liberal return limit and stop-over privileges than apply in connection with reduced fares authorized for conventions.

Clinics at the New York Session

The Local Committee on Arrangements for the New York session of the American Medical Association announces that it has about completed the program of clinics to begin Monday, June 4, and continue through Tuesday, June 5. A general committee has appointed a subcommittee and has assigned to this the task of arranging clinics and demonstrations in general medicine; pharmacology and therapeutics; pathology and physiology, including the clinical and medicolegal phases, laboratory diagnosis and cancer research; preventive medicine and public health, including state and municipal phases of the work; pediatrics, dermatology, neurology, mental diseases, general surgery, orthopedic surgery, gynecology, obstetrics, urology, surgery of the colon and rectum, ophthalmology, otology, rhinology, laryngology, stomatology, roentgenology, anesthetics, nursing, including training schools and district nursing, hospital social service, planning and financing municipal and other hospitals, hospital superintendency and executives, and military and Red Cross work.

The programs already outlined include clinics, ward walks, demonstrations, both clinical and laboratory, conference, necropsies, moving picture demonstrations, exhibits by means of charts, models and laboratory specimens, and visits to the officers of the different branches of the health department and other points of medical interest.

Physicians of New York have arranged to place the medical resources of the city at the disposal of the Fellows of the American Medical Association. Interesting material will be offered to those who go to New York, no matter how large the attendance at the annual session may be. In view of this exceptional opportunity to see this medical center, those who can go to New York should plan to arrive not later than the morning of Monday, June 4, so that they may register both as in attendance at the annual session and with the Local Committee on Arrangements. The privileges of these clinics are to be limited to those who are registered as in attendance at the annual session of the Association.

Marriages

ASST. SURG. LOUIS H. WILLIAMS, M. R. C., U. S. Navy, to Miss May Ashby Warden of Washington, D. C., March 31.

JAMES PINER BARTLEY, M.D., Bartlesville, Okla., to Miss Elizabeth B. Ensor of Baltimore, at Bartlesville, March 1.

WILLIAM V. PRUETT, M.D., Brownsville, Tenn., to Miss Elizabeth Selden Henry of Chicago, March 5.

JOHN ARCHIBALD MCINTYRE, M.D., Walcott, Iowa, to Miss Miriam Sybil Bliss of St. Paul, April 7.

LESLIE CORNEALOUS RANDALL, M.D., Licking, Mo., to Miss Alta Dunham of Craddock, Mo., April 8.

HERMAN MORRIS ADLER, M.D., Chicago, to Miss Frances Porter of Hubbard Woods, Ill., recently.

SOPHIA BILLENKAMP, M.D., to Mr. John Conrad Donis, both of St. Louis, at Clayton, Ill., April 4.

ARNO ROY ZACK, M.D., to Miss Elizabeth Wagner, both of Bethlehem, Pa., March 29.

Deaths

John Kearsley Mitchell, M.D., Philadelphia; University of Pennsylvania, Philadelphia, 1883; aged 57; a Fellow of the American Medical Association and College of Physicians of Philadelphia; a member of the Association of American Physicians, American Neurological Association, and many special societies; physician to the Philadelphia Infirmary for Nervous Diseases and consulting neurologist to the Pennsylvania Institution for Feebleminded Children; from 1886 to 1892 demonstrator of general symptomatology and diagnosis, and lecturer from 1893 to 1898 in his alma mater; co-author with his father, the late Dr. S. Weir Mitchell, of "Fat and Blood," the eighth edition of which appeared in 1898; author of a work on "Remote Consequences of Injuries of Nerves," which appeared in 1895, and of one on "Mechanotherapy Massage and Physical Education," which was published in 1904; who had been ill with heart disease for the last eight months; died at his home, April 10.

George Fuller Hawley, M.D., Chicago; College of Physicians and Surgeons in the City of New York, 1868; aged 73; formerly a Fellow of the American Medical Association; a member of the Illinois States Medical Society, Mississippi Valley Medical Association and American Academy of Ophthalmology and Oto-Laryngology; professor of otology, rhinology and laryngology in the Illinois Post-Graduate Medical School; a member of the staff of Cook County Hospital, and the Illinois Charitable Eye and Ear Infirmary; one of the first men in Chicago to specialize on diseases of the eye, ear, nose and throat; an assistant of Sir Morell Mackenzie in the early eighties; died at his home, April 16, from chronic myocarditis.

P. A. Surg. Earle Mason Brown, U. S. Navy (retired), Los Angeles; University of Michigan, Ann Arbor, 1901; aged 40; a Fellow of the American Medical Association, and a member of the Association of Military Surgeons of the United States; who entered the navy, May 8, 1902, and was retired, April 8, 1910, for incapacity resulting from an incident of service, after two years and ten months' sea service and four years and two months' shore or other duty; died in Palm Springs, Calif., April 3.

Joseph B. Payne, M.D., Hot Springs, Ark.; Memphis (Tenn.) Medical College, 1855; New Orleans School of Medicine, 1859; aged 83; vice president of the Arkansas State Medical Society in 1890; surgeon of the Nineteenth Arkansas Infantry, C. S. A., during the Civil War; at one time city physician of Hot Springs and at the time of his death president of the local school board; died at the home of his daughter in Argenta, March 27.

Isaac Newton Rawles, M.D., Dyersburg, Tenn.; Vanderbilt University, Nashville, Tenn., 1880; aged 59; a member of the Tennessee State Medical Association and first president of the Dyer County Medical Society; for several years county and city health officer; president of the city board of education; a member of the legislature in 1905 and 1906; died at his home, February 25, from cerebral hemorrhage.

John Thomas Manning, M.D., Lineville, Ala.; Vanderbilt University, Nashville, Tenn., 1885; aged 52; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Alabama; died at his home, March 30, from the effects of a gunshot wound of the head, believed to have been self-inflicted, with suicidal intent, while despondent on account of ill health.

Isaiah Franklin Houx, Gordon, Texas (license, Judicial District Board, Texas, 1874); a practitioner since 1866; aged 80; a member of the State Medical Association of Texas; a Confederate veteran; also a pharmacist; died in St. Joseph's Infirmary, Fort Worth, Texas, March 21, from peritonitis, following an operation on the prostate gland a few days before.

Leopold Goldschmiedt, M.D., Los Angeles; New York University, New York, 1869; aged 69; formerly a member of the Medical Society of the State of California; deputy coroner of New York City from 1876 to 1882; sanitary inspector of New York City from 1884 to 1888; inspector of schools at Ensenada, Lower California, Mexico; died in Los Angeles, February 12.

William Washington Everett, M.D., Highland, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 60; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society; surgeon to St. Joseph's Hospital, Highland; died in a hospital in St. Louis, March 30, from a nervous breakdown.

William H. Gillum, Rockville, Ind. (license, Indiana, 1897); aged 69; a member of the Indiana State Medical Association, and formerly secretary of the Parke County Medical Society and health officer of Parke County; local surgeon of the Vandalia System; a Confederate veteran; a practitioner since 1868; died at his home, March 28.

John Edmond Howe, M.D., Greenfield, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1873; aged 69; a Fellow of the American Medical Association; a member of the State Board of Pardons and Parole from 1909 to 1911; a well known surgeon of southern Iowa; died at his home, April 3, from heart disease.

Delbert Melvin Shively, M.D., Kansas City, Kan.; University Medical College, Kansas City, Mo., 1901; aged 45; a member of the Kansas Medical Society; coroner of Wyandotte County, Kan., for two terms and twice president of the Western Association Baseball League; died at his home, April 2.

John W. Meek, M.D., Camden, Ark.; New Orleans School of Medicine, 1870; aged 67; formerly a Fellow of the American Medical Association; a member of the Arkansas Medical Society; formerly president of the board of health of Camden and for two terms state senator; died at his home, March 31.

Walter W. Wilkinson, M.D., Catawba Sanatorium, Va.; George Washington University, Washington, D. C., 1905; aged 40; a Fellow of the American Medical Association; assistant physician at the Catawba Sanatorium, Va.; died in that institution, March 28, from tuberculosis.

William Wallace Smith, M.D., Avoca, N. Y.; Bellevue Hospital Medical College, 1871; aged 71; a member of the Medical Society of the State of New York and for seventeen years secretary of the Steuben County Medical Society; died at his home, February 4, from pneumonia.

Harvey Lionel Morris, M.D., Vassar, Mich.; Saginaw Valley Medical College, Saginaw, Mich., 1898; New York University, New York, 1899; aged 40; formerly a Fellow of the American Medical Association; died in Miami, Fla., March 28, from pernicious anemia.

Judson Beach, M.D., Etna, N. Y.; University of Michigan, Ann Arbor, 1874; aged 72; a Fellow of the American Medical Association; a veteran of the Civil War; for more than forty years a practitioner of Etna; died at his home, March 16, from angina pectoris.

John Harvey Hansen, M.D., Grandfield, Okla.; Kentucky School of Medicine, Louisville, 1883; aged 69; a Fellow of the American Medical Association; once president of the Decatur County (Iowa) Medical Society; died at his home, March 11, from pneumonia.

August Ernst Brune, M.D., San Francisco; Cooper Medical College, San Francisco, 1875; University of Berlin, Germany, 1877; aged 67; a member of the Medical Society of the State of California; died at his home, March 24, from cerebral hemorrhage.

Thomas G. Stephens, M.D., Sidney, Iowa; Western Reserve University, Cleveland, 1856; aged 84; a pioneer practitioner of Fremont County, where he had practiced for more than half a century; died at the home of his daughter in Sidney, March 20.

Charles M. Matson, Brookville, Pa. (license, Jefferson County, Pa., 1877); aged 83; a practitioner since 1858; founder and first president of the Jefferson County Medical Society; surgeon of volunteers during the Civil War; died at his home, March 27.

Heman Walbridge Fulkerson, M.D., Louisa, Ky.; Kentucky School of Medicine, Louisville, 1907; aged 32; formerly a member of the Kentucky State Medical Association; died in the Central State Hospital, Lakeland, Ky., March 23, from paresis.

James H. Frank, M.D., Anoka, Minn.; Minnesota Hospital College, Minneapolis, 1882; American Medical College, St. Louis, 1883; aged 63; for several years physician and surgeon in charge of the Anoka State Hospital; died at his home, April 1.

Robert H. Baird, M.D., Howell, Mich.; Detroit College of Medicine and Surgery, 1901; aged 42; a Fellow of the American Medical Association; who went to Vero, Fla., last fall on account of his health; died in that place, March 23, from heart disease.

Samuel Tate Blair, M.D., Springfield, Mo.; University of Nashville, Tenn., 1867; aged 78; a Confederate veteran; for several years a member of the faculty of the Northwestern Medical College, St. Joseph, Mo.; died at his home, March 30.

John J. Stites, M.D., Pontiac, Ill.; Eclectic Medical Institute, Cincinnati, 1850; Medical School of the Valley of Virginia, Winchester, 1860; aged 90; formerly a member of the Illinois State Medical Society; died at his home, March 25.

Willard Adolphus Whitney, M.D., Big Rapids, Mich.; Homeopathic Hospital College, Cleveland, 1870; aged 73; an honorary member of the Michigan State Medical Society; died at his home, February 11, from pernicious anemia.

Roy Earl Fisk, M.D., Salt Lake City, Utah; Bennett Medical College, Chicago, 1913; aged 34; formerly a practitioner of Highwood, Mont.; died at St. Mark's Hospital, Salt Lake City, February 24, from acute rheumatic endocarditis.

George W. Baskett, M.D., Van Alstyne, Texas; University of Louisville, Ky., 1875; aged 67; formerly a Fellow of the American Medical Association; a member of the State Medical Association of Texas; died at his home, March 26.

Joseph Faerber, Merrill, Wis. (registration, Wisconsin, 1899); aged 78; a practitioner since 1862; for two years surgeon in the navy of Holland; but for thirty-five years a practitioner of Merrill; died at his home, about March 27.

John Winfield Keppel, M.D., Youngstown, Ohio; Western Reserve University, Cleveland, 1886; aged 61; formerly a member of the Ohio State Medical Association; also a druggist; died in the Youngstown Hospital, March 19.

Benjamin F. Thomson, M.D., Mount Sterling, Ky.; Jefferson Medical College, 1864; aged 76; for more than half a century a practitioner of Montgomery County; died at his home, March 21, from carcinoma of the liver.

William T. Green, M.D., Albion, Ind.; Rush Medical College, 1880; aged 59; a member of the Indiana State Medical Association; state senator from the Twelfth District; died in Indianapolis, January 23, from pneumonia.

George S. Walker, M.D., Staunton, Va.; Jefferson Medical College, 1859; aged 80; assistant surgeon of the Twenty-First North Carolina Cavalry, C. S. A., during the Civil War; died at his home, March 13, from erysipelas.

Hugh Austin Pinson, M.D., Pittsburgh; Atlanta (Ga.) Medical College, 1915; aged 33; house physician at St. John's General Hospital, Pittsburgh; died at that institution, March 27, after an operation for appendicitis.

John Dean Scouller, M.D., Pontiac, Ill.; University of Buffalo, N. Y., 1870; aged 81; for nineteen years superintendent of the State Reformatory, Pontiac; died in that city, March 31, after a surgical operation.

Oliver Prescott Sook, M.D., Newark, Ohio; Homeopathic Hospital College, Cleveland, 1871; aged 73; local surgeon for the Pennsylvania System; a veteran of the Civil War; died suddenly in his office, April 1.

Charles E. Barnes, M.D., Mountain Grove, Mo.; Barnes Medical College, St. Louis, 1895; aged 44; formerly a member of the Missouri State Medical Association; died in a sanatorium in St. Louis, March 24.

James Sibbald, M.D., Philadelphia; Jefferson Medical College, 1881; aged 57; a specialist in proctology; for several years surgeon to St. Timothy's Hospital; died at his home, March 30, from heart disease.

Elijah F. Miller, M.D., Verdella, Mo.; American Medical College, St. Louis, 1880; aged 60; a member of the Missouri State Medical Association; died in Mount Carmel Hospital, Pittsburg, Kan., March 21.

Louis Henry Hallock, M.D., Flint, Mich.; Miami Medical College, Cincinnati, 1882; aged 57; for many years a druggist of Sebawaing, Mich., and Cheyenne, Wyo.; died at his home, March 31, from carcinoma.

Harry Leach Bender, M.D., New York; College of Physicians and Surgeons in the City of New York, 1894; aged 44; a specialist on diseases of the nose and throat; died at Clifton Springs, N. Y., March 29.

Maximilian C. Cornelius, M.D., Chicago; John A. Creighton Medical College, Omaha, Neb., 1895; aged 43; died in St. Luke's Hospital, Chicago, April 3, after an operation for carcinoma of the bladder.

James Everett Johnson, M.D., Denver; Denver College of Medicine, 1895; aged 45; a member of the Colorado State Medical Society; died in San Diego, Calif., March 17, from chronic endocarditis.

James W. Stone, M.D., Henderson, Ky.; University of Louisville, Ky., 1880; aged 62; a member of the Kentucky State Medical Association; died at his home, February 5, from heart disease.

Leroy M. Lee, M.D., Orlando, Okla.; Washington University, St. Louis, 1872; aged 65; for many years a practitioner of Elsberry, Mo.; died at his home near Orlando, March 16, from heart disease.

John Wesley Way, M.D., Kremmling, Colo.; Kentucky School of Medicine, Louisville, 1892; aged 49; formerly a member of the Colorado State Medical Society; died at his home, March 24.

George A. McClain, M.D., Johnson City, Tenn.; Vanderbilt University, Nashville, Tenn., 1891; aged 68; formerly a member of the Tennessee State Medical Association; died at his home, March 21.

William J. Montford, M.D., Swansboro, N. C.; Jefferson Medical College, 1859; aged 77; formerly a member of the Medical Society of the State of North Carolina; died at his home, March 31.

Henry W. Ogden, M.D., Evanston, Ill.; Rush Medical College, 1881; aged 73; for many years a practitioner at Fort Atkinson, Wis.; a veteran of the Civil War; died at his home, February 17.

George W. Redmond, Potter, Kan. (license, Kansas, 1901); aged 68; formerly a Fellow of the American Medical Association; died in the Atchison (Kan.) Hospital, March 28, from empyema.

Charles Locke Skinner, M.D., Charlestown, W. Va.; University of Virginia, Charlottesville, 1897; aged 42; a Fellow of the American Medical Association; died at his home, March 24.

Benjamin Eugene Donham, M.D., Saulnierville, N. S.; Harvard Medical School, 1868; aged 73; a veteran of the Civil War; died in the Togus (Me.) Soldiers' Home in February.

Charles H. Walden, New Market, Ind. (license, Indiana, 1897); aged 62; formerly a Fellow of the American Medical Association; died at his home, January 29, from tuberculosis.

Marcus Jay Williams, M.D., Syracuse, N. Y.; University of Vermont, Burlington, 1878; aged 63; associate physician to the Crouse-Irving Hospital; died at his home, March 11.

Robert Henry Sykes, M.D., North Warren, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1895; aged 51; died in the West Penn Hospital, Pittsburgh, March 12.

Perry Llewellyn Anderson, M.D., New York; College of Physicians and Surgeons, Chicago, 1886; aged 57; died in Rochester, Minn., February 24, from chronic nephritis.

Alexander C. Spencer, M.D., Bloomington, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1883; aged 65; died at his home, near Bloomington, February 7.

Victor Hugo Ruble, M.D., Columbus, Mont.; Bellevue Hospital Medical College, 1887; aged 55; was accidentally shot and killed on his ranch, near Columbus, March 19.

William Hause, M.D., Westport, Ind.; Eclectic Medical Institute, Cincinnati, 1865; aged 79; a veteran of the Civil War; died at his home, March 22, from nephritis.

Julia Phiania Harton, M.D., Philadelphia; Women's Medical College of Pennsylvania, Philadelphia, 1904; aged 35; died at her home, March 15, from tuberculous meningitis.

Joseph Coloni Dreher, Battle Creek, Mich. (license, Michigan, 1900); aged 72; a practitioner since 1869; died at the home of his son in Battle Creek, March 22.

Octavius King Yates, M.D., West Paris, Me.; Medical School of Maine, Brunswick, 1870; aged 83; died at his home, March 18, from cerebral hemorrhage.

Simeon Gray, Worthington, Ind. (license, Indiana, 1897); aged 69; a practitioner since 1870; died at his home, January 31, from cerebral hemorrhage.

Charles Everett Thompson, M.D., Hamilton, Ont.; University of Toronto, Ont., 1916; aged 22; died in Toronto, February 3, from pneumonia.

Lloyd John O'Brien, M.D., Burnips, Mich.; Chicago College of Medicine and Surgery, 1913; aged 36; died at his home, March 19, from anemia.

Joseph D. Zimmerman, M.D., Lebanon, Pa.; University of Pennsylvania, Philadelphia, 1871; aged 72; died at his home, March 22.

William A. Johnston, M.D., Cambridge City, Ind.; Eclectic Medical Institute, Cincinnati, 1881; aged 79; died at his home, February 7.

Harvey A. White, M.D., Chicago; Eclectic Medical Institute, Cincinnati, 1882; aged 78; died in Tampa, Fla., March 27.

Abbie A. Hinkle, M.D., Evanston, Ill.; Hahnemann Medical College, Chicago, 1887; died at her home, April 2.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE "HOME MEDICAL ADVISER" TO DATE

"Free" Medical Service to Purchasers of "Home Treatment" Books

A modification of the old "free chromo with every pound of tea" scheme has been worked for the past few years in the sale of books of the "home medical adviser" type. The system is one of wide distribution and is operated under various names as well as from various cities.

The plan generally seems to be to have agents go out from various centers selling a pretentious looking volume. The book, or books, for there are apparently more than one, go under various names, having been sold under such titles as "Medicology," "Domestic Medical Practice," "Health and Longevity," "Library of Health," etc. Sometimes they come in a single volume of about 1,500 pages and one-half foot thick; in other instances, apparently, they are prepared in two-volume form. Such specimens as have been brought or sent to this office indicate that these imposing tomes are printed from stereotypes that have seen better days. In at least one instance the matter seems to be made up largely from a book published over thirty years ago. This book, while written by men of standing and containing matter of value and interest to the public, was never prepared with the slightest idea on the part of the authors that it would be revamped and used as a premium for an alleged free medical treatment.

DOMESTIC MEDICAL SOCIETY

Certificate of Membership

This Certifies That _____ and family, being members of the Domestic Medical Society in good standing, are entitled to the privileges of Health Protection, Medical Service, Consultation, Diagnosis, Prescriptions, and Advice and also to personal attendance for any and all ailments, with the exception of Confinement or Surgical Operations, at the office of the consulting Physicians without any extra charge or fee whatsoever for such services, for a period of two years from the date of this Certificate.

Special arrangements and prices made for Surgical and Confinement cases on application to Consulting Physicians.

GENERAL OFFICES OF DOMESTIC MEDICAL SOCIETY
45 West 34th Street, New York, N. Y.
REPRESENTED BY COMPETENT CONSULTING PHYSICIANS IN ALL PRINCIPAL CITIES OF THE UNITED STATES

Urinalysis and microscopical examinations not to exceed $2.00.
Serum injections and administration of anti-toxins at cost of serum.
All medicines received at Physician's Office to be paid for at time of visit not to exceed fifty cents.
All calls within city limits charged at a special rate not to exceed one dollar
Present consulting coupon to our nearest physician for purpose of identification.

Dated at Chicago, Ill. _____ 191 Certificate No. _____

DOMESTIC MEDICAL SOCIETY

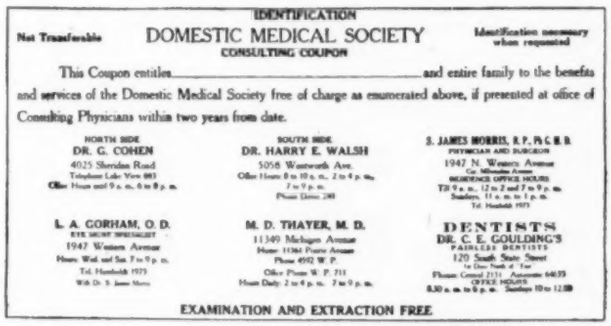
Photographic facsimile (reduced) of the "Certificate of Membership" issued by the Chicago branch of the "Domestic Medical Society" with offices at 45 West 34th Street, New York City.

DOMESTIC MEDICAL SOCIETY

Each purchaser of the "health book" is given a very official-looking certificate which is said to entitle him and his family "to the privileges of Health Protection, Medical Advice, Consultation, Health Advice, and Prescriptions at the office of the consulting Physicians without any extra charge or fee whatsoever for such services, for a period of two years from date of this Certificate." The business is done by agents who, before going forth on their errand, memorize a line of "patter" to unload on prospective victims. Here is part of the "Demonstrators Talk" which is said to have been used by those who attempted to sell "Domestic Medical Practice":

THE DEMONSTRATOR'S "PATTER"

"Good morning! You received a circular from the Domestic Medical Society? That is too bad, you should have had one! I'll take your name and address and have one mailed you free. Your name is what? Your initials are what? Your number is what?



IDENTIFICATION

Not Transferable — DOMESTIC MEDICAL SOCIETY — Identification necessary when requested

CONSULTING COUPON

This Coupon entitles _____ and entire family to the benefits and services of the Domestic Medical Society free of charge as enumerated above, if presented at office of Consulting Physicians within two years from date.

NORTH SIDE
DR. G. COHEN
4025 Sheridan Road
Telephone Lake View 883
Office Hours until 9 a. m. 6 to 8 p. m.

SOUTH SIDE
DR. HARRY E. WALSH
5056 Wentworth Ave.
Office Hours 8 to 10 a. m. 2 to 4 p. m.
7 to 9 p. m.
Phone Drexel 288

S. JAMES MORRIS, R.P., Ph.G., M.D.
PHYSICIAN AND SURGEON
1947 N. Western Avenue
Cor. Milwaukee Avenue
CONSULTATION OFFICE HOURS
7:30 p. m. 12 to 2 and 7 to 9 p. m.
Sundays, 11 a. m. to 1 p. m.
Tel. Humboldt 1973

L. A. GORHAM, O. D.
EYE SIGHT SPECIALIST
1947 Western Avenue
Hours: Wed. and Sat. 7 to 9 p. m.
Tel. Humboldt 1973
With Dr. S. James Morris

M. D. THAYER, M. D.
11349 Michigan Avenue
Home: 11364 Pierce Avenue
Phone 4592 W. P.
Office Phone W. P. 711
Hours Daily 2 to 4 p. m. 7 to 9 p. m.

DENTISTS
DR. C. E. GOULDING'S
PAINLESS DENTISTS
120 South State Street
1st Door North of Van Buren
Phones: Central 2131 Automatic 64-173
OFFICE HOURS
8:30 a. m. to 8 p. m. Sundays 10 to 12:30

EXAMINATION AND EXTRACTION FREE

Identification coupon in use about two years ago by the Chicago branch of the "Domestic Medical Society" in connection with the sale of "Domestic Medical Practice."

"Our object is to help stop the spread of contagious diseases. You know that there would not be any scarlet fever, diphtheria, or even consumption if people knew how to prevent them. Isn't that so? It requires one minute's explanation and costs you nothing. You can spare one minute, can't you? I'll just step in and explain it to you.

"We first take up contagious diseases. If Diphtheria, Scarlet Fever, Small Pox or Measles should come to your home you certainly would want to know what to do about it, and what the board of health requires you to do, wouldn't you?

"We show you here the Physician's Manikin painted especially for this work; it shows the location of all the organs of the human body, the back and front view of the heart, the lungs, the liver, the stomach, the kidneys, etc.

"You hear a great deal about appendicitis. There you see the Appendix. It is the most mysterious organ of the human body. Medical records tell us that more people have been killed by the operation than die from the disease itself.

"Our authority on this, has cured 95 per cent. of his patients by a local application of oils, such as petroleum or turpentine, applied over the area outlined by Capital A.

"Then you have in your own home treatment for 49 diseases by local application, such as Colds, Pneumonia, Neuralgia, Epilepsy, Dyspepsia, Kidney troubles, etc.

"These are all cured by Turpentine, Vinegar, Salt, Lemon, etc., remedies which you have in your own kitchen. The doctor prescribes all these in Latin, which confuses you and helps the druggist to get higher prices for his drugs. Isn't that so?

"Then we have the Plants, Vegetables, Fruits and Herbs. Celery cures Rheumatism, Lemon cures 21 different diseases, the Pumpkinseed removed the tapeworm, head, body and all.

"Did you ever have the Grippe? Do you know that one-half a teaspoonful of Cayenne pepper will cure the worst attack of Grippe in one night? Cayenne pepper also cures Scarlet Fever."

If the "demonstrator" has not been gently but firmly propelled down the front steps by the time he reaches this point, he discourses on the care of infants and the treatment of infant ailments as detailed in "Domestic Medical Practice." Then—we quote *verbatim*—he continues:

"We give you over 500 standard medical prescriptions in Latin and English, as prescribed by Physicians, showing you how you are overcharged by the druggist.

"For instance, the standard medical prescription for Cholera Morbus is: Piper, Sodium Chlorid, Cordialis Rubus Villos, Aqua Bulliens. This is nothing but pepper, common salt, blackberry brandy and boiling water, articles to be found in almost every kitchen, or which can be had from a grocery store for next to nothing, but, from a Doctor and in Latin, it will cost from $1.50 on to $2.50."

And the peroration:

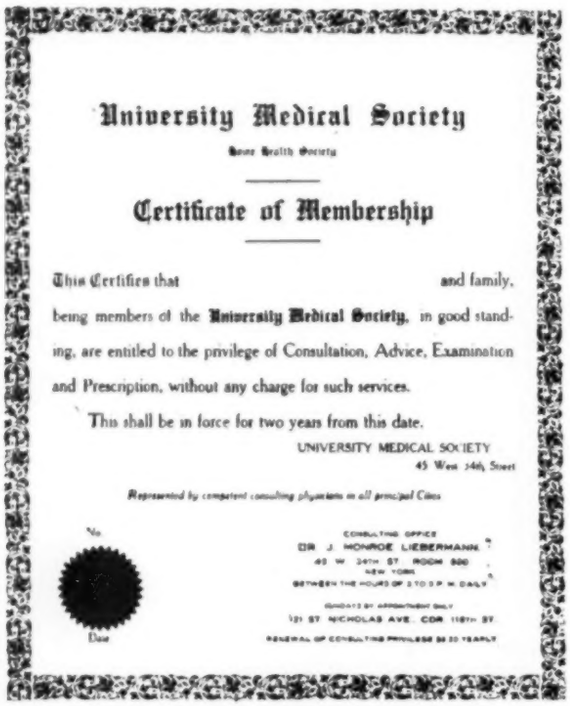
"It is complete in one large convenient volume of 1,570 pages, 42 departments, each of which is just as useful to you as the three or four I have shown you, and is bound just like this.

"It is placed in your home for three and one quarter cents a day, twenty five cents a week or one dollar a month for a period of ten months.

"Now, any one can afford a paltry quarter a week for a valuable work like this, don't you think so?

"Candidly and conscientiously, don't you think so? Of course you do; place your name here, please."

"Domestic Medical Practice," to which the preceding "talk" refers, was put on the market by a concern calling itself the "Domestic Medical Society." While located in Chicago its



University Medical Society

Home Health Society

Certificate of Membership

This Certifies that and family,

being members of the University Medical Society, in good standing, are entitled to the privilege of Consultation, Advice, Examination and Prescription, without any charge for such services.

This shall be in force for two years from this date.

UNIVERSITY MEDICAL SOCIETY
45 West 34th Street

Represented by competent consulting physicians in all principal Cities

No

Date

CONSULTING OFFICE
DR. J. MONROE LIEBERMANN
45 W. 34TH ST. ROOM 800
NEW YORK
BETWEEN THE HOURS OF 9 TO 5 P. M. DAILY
SUNDAYS BY APPOINTMENT ONLY
121 ST. NICHOLAS AVE. COR. 116TH ST.
RENEWAL OF CONSULTING PRIVILEGE $5.00 YEARLY

Photographic facsimile (reduced) of the "Certificate of Membership" used by the "University Medical Society" ("Home Health Society") with headquarters at 45 W. 34th St., New York City.

activities were by no means purely local, for we have had inquiries about it from Massachusetts to California.

AMERICAN HEALTH SOCIETY

A scheme that seems essentially similar is also operated by a Philadelphia concern which seems to go under such names as the "Historical Publishing Company," the "American Health Society," the "Home Health Society," the "University Health Society"—and possibly others.

The "Historical Publishing Company" seems to have been a little too active in its home state for its own comfort. A Philadelphia paper during the past few weeks has recorded the arrest of one of the company's agents in Lebanon County, Pa. The agent, according to the newspaper report, offered for sale the usual "Library of Health" and those who paid $18 for the book were given "a certificate with a big red seal" which entitled the holder to receive treatment at the hands of the "Eminent Expert and Chief of Staff" of the "Home Health Society." Also, the enthusiastic agent seems to have given the inference that the "certificate" holders were entitled to write to Health Commissioner Samuel G. Dixon, who would diagnose their cases and send prescriptions. Here is where the agent made a mistake and his arrest followed an investigation by the officials of the state department of health. According to the same paper, the alleged "prominent specialist and chief of staff" named on the certificate was one B. Frank Scholl, M.D., of Philadelphia.

When the complaints against the company were heard before the deputy attorney-general of the state, it is alleged that the defendants asserted that they had sold one million of their publications! The company admitted that the various "health societies" under whose names it did business had no existence other than trade names. As a result the attorney general ordered the Historical Publishing Company, (1) to use only its charter name, (2) to discontinue using the names of the various "health societies," (3) to stop issuing "certificates" agreeing to treat people and (4) to cease issuing free prescriptions.

In the Middle West the "Historical Publishing Company" apparently operates as the "American Health Society" and is represented by the "Western Distributing Company," with offices in Chicago. The book sold by the Western Distributing Company is the "Library of Health," a pretentious volume of about 1,500 pages. The title page of the "Library of Health" bears the names of three physicians, B. F. Scholl, J. F. Little and F. E. Miller, while the frontispiece is a full page half-tone purporting to be a picture of Dr. B. F. Scholl. An interesting side-light on the methods used in advertising this book has been brought to our attention by Health Commissioner Ruhland of Milwaukee. The "Western Distributing Company" issued an eight page leaflet on scarlet fever under the title "Bulletin of the American Health Society, Publishers of Library of Health." The leaflet first reprints from a Milwaukee paper statements made by Commissioner Ruhland on the subject of scarlet fever. It then gives information of more or less value describing the symptoms and purporting to help the public differentiate between scarlet fever and diphtheria. It very properly declares that cases such as it describes should all be considered serious and a physician summoned, and it also informs the public that all cases of scarlet fever or other contagious disease must be reported.

The "Bulletin" closes with the statement that the information contained in it has been "selected" from the "Library of Health." It is, presumably, sent out as a means of allowing their "demonstrators" more easily to approach possible purchasers.

Aside from any inherent dishonesty that may or may not attach to the scheme of selling these various books and "certificates," the plan has certain fundamental fallacies. The book, at least in some instances, is over a quarter of a century old. Including, as some of the books do, scores of prescriptions, it will inevitably lead the purchaser to attempt self-treatment of conditions that may be dangerous not only to the individual but to the community. The bulk of the books —1,500 pages or more—is such that the reader either gets an

PAYMENTS MONTHLY BY MAIL AS PER CONTRACT

TOTAL PRICE $12.00 NET
DOMESTIC MEDICAL SOCIETY
45 West 34th Street, New York City

RECEIPT FOR PAYMENT

Town ..... Date .....

Received of .....

..... Dollars ..... Cents

on account of Domestic Medical Practice

..... Representative

COPY OF CONTRACT

Gentlemen:—

I hereby apply for Two Years' Membership with Domestic Medical Practice, complete in one massive volume, in half leather binding, for which I agree to pay Twelve ($12.00) Dollars, as follows: Two ($2.00) Dollars first payment and One ($1.00) Dollar each month thereafter until the whole amount Twelve ($12.00) Dollars shall be paid in full. This contract records my full understanding. It is irrevocable and becomes due and payable in full upon non-fulfilment of any condition herein.

PAYMENTS MONTHLY BY MAIL, AS PER CONTRACT

REVISED EDITION 1910

TOTAL PRICE $10.00 NET
UNIVERSITY MEDICAL SOCIETY
(Home Health Society)
45 W. 34th St.

RECEIPT FOR PAYMENT WITH ORDER

Town ..... Date .....

Received of .....

..... Dollars ..... Cents

on account of Health and Longevity

Copy of Contract.

Gentlemen:—

I hereby subscribe for HEALTH AND LONGEVITY complete in one massive volume, in cloth binding, for which I agree to pay $10.00 as follows: $2.00 with the order and $1.00 each month thereafter until the whole amount $10.00 shall be paid in full. This contract records my full understanding. It is irrevocable and becomes due and payable in full upon non-fulfilment of any condition herein.

Signature .....

Business Address .....

HEALTH AND LONGEVITY

Certificate of Membership giving two years free advice by Specialists

Photographic facsimile (reduced) of the contract blanks signed by the purchasers of "Domestic Medical Practice" and "Health and Longevity," respectively. Notice that the addresses of both the "Domestic Medical Society" and "University Medical Society" ("Home Health Society") are the same.

ill-digested conception of their contents or will develop an unhealthy habit of physical introspection.

Up-to-date books of one hundred or two hundred pages written by men of standing and dealing with principles of prevention rather than with details of treatment are of far greater value to the public in the preservation of health and can be and are sold at a legitimate price. It is the bulky pretentiousness of the "health books" together with the added

inducement of alleged free medical service given as a premium that makes it possible for a price of ten, twelve or eighteen dollars to be asked and obtained. There is no legitimate excuse, either from the standpoint of economics or health preservation, for selling mediocre publications, with alleged medical service as a premium, at a price that is out of all proportion to the value received.

Correspondence

ABOLITION OF THE PATENTS ON SALVARSAN

To the Editor:—This letter is written to urge physicians and medical societies, individually and collectively, to exert all the influence they can bring to bear on Congress to abolish the patents on salvarsan, which, aside from causing enormous expense to the sick, have put very serious restrictions on the use of this necessary drug.

Now is the best opportunity we shall ever have to get rid of these patents. Our experience with salvarsan during the last two years has been almost intolerable. Salvarsan and its related products, during this time, have been obtainable only through the grace of one man, Mr. H. A. Metz, in New York City. The drug is covered, we understand, by all the protective privileges that can possibly be used in caring for the pecuniary interests of those owning proprietary remedies. The name is copyrighted; the drug itself is a patented product; and the processes of its manufacture are patented. Under these patents, the German owners and their American representative have made millions from the sale of the drug in America.

Although the facts are familiar to most physicians, it may be worth while to review the situation in regard to this drug that has developed during the war: First, Mr. Metz used his supply and what he could obtain from Germany in such manner as he saw fit. He distributed the drug to physicians, giving them such amounts as he thought they should have and limiting them in any way he pleased. We are not saying that he did not act wisely and in the best way he knew how or with public spirit, but at best he was a public-spirited and wise autocrat, dictating to the whole body of men who have the sickness among 100,000,000 people in their charge as to the supply of a drug that is at times essential. Next, when he was no longer able to supply the drug himself, he allowed the Dermatological Research Laboratory of Philadelphia to make it, under an agreement by which he could stop their manufacture of it immediately, whenever he saw fit. That laboratory, it may be said in passing, is not organized for profit, and their large profits from the manufacture of salvarsan during a short period have been dedicated to research in medicine. That institution, it may also be said, made a salvarsan which in the opinion of some competent men was less toxic than the commercial product from Germany. Finally, when the *Deutschland* succeeded in getting over here and brought a new supply of salvarsan, Mr. Metz immediately stopped the distribution of the Philadelphia salvarsan, and for the last several months we have been compelled to rely, as far as salvarsan is concerned, on such supplies as he has seen fit to furnish us. Sometimes, he has furnished it; sometimes he has not. It rests with him whether or not a physician gets a supply; and your patient or mine can get the salvarsan he needs or not, according to Mr. Metz' decision. The situation is as though the supply of quinin for this country was absolutely in one man's hands.

Recently, Mr. Metz has seen fit to send out a circular letter to the profession, in which he makes the explicit threat of exacting legal penalty from those who use any substitute for the patented article—this in spite of the fact that the new supply of salvarsan received from Germany, according to published reports by competent, disinterested men, has proved less free from danger than the salvarsan we got from Germany before the war or the salvarsan made in Philadelphia. In the same letter, Mr. Metz informs us that he is going to try to make it in this country, pretty soon. He is going to furnish it at the old price—a price which represents millions of dollars of profits annually from the American sale of the drug. Whether he is going to succeed or not in making a satisfactory article nobody knows; but we do know that if it were not for rights that rest in Germany and do not belong to Mr. Metz except through German title, we have persons in this country who could make a first-class salvarsan and who would be glad to sell it at from one-third to one-fourth the price that Mr. Metz wants for it and that we have been made to pay for it heretofore.

The question may well be raised of the moral right of profiting to the extent of great fortunes from patents on drugs of necessity to the sick. Certainly, it is abhorrent to the ethics of the medical profession. But, even if there be nothing wrong in this, it may be said in the case of salvarsan that the drug has already yielded profits amounting to millions of dollars, and every one interested in the ownership of the drug has already been well provided for. This doubtless applies to the Ehrlich family, and there is every reason to believe that his agency for the drug in this country has added greatly to Mr. Metz' large wealth; so that no injustice would be done any one by abolishing these patents and giving the sick, for the future, the benefit of the reduction in price, and providing assurance against further failure in supply of the drug.

The medical profession and the public should see to it that these patents are abolished. Physicians and medical societies should agitate the matter with the public and use their utmost influence with their senators and congressmen to get them to take action to abolish these patents. Individuals should take it up by letters and personally when possible. Medical societies should do the same. The following resolutions have recently been passed by the Chicago Medical Society and by the St. Louis Medical Society, and they are offered as an example of such resolutions:

WHEREAS, Salvarsan is a drug which is of vital importance to the protection of health and to the saving of life; and

WHEREAS, The patent rights conferred on salvarsan and its congeners have created a monopoly which has permitted a price to be placed on the drug which makes it unavailable to tens of thousands of indigent sick in this country; and

WHEREAS, The drug has hitherto been supplied to this country from foreign shores and the supply during the war has been uncertain, and insufficient; and

WHEREAS, The patents have prevented the preparation and distribution of the drug in this country by American laboratories; and

WHEREAS, The patents conferred are operating against the health interests and the public welfare of this country, therefore be it

Resolved, By the Chicago Medical Society, that Congress be earnestly urged to abolish the patents on salvarsan and its closely related products.

Copies of the resolution or notice of the action should be sent to the chairmen of the Committees on Patents of the House and of the Senate and to members of the House and Senate. Physicians are urged to write to their congressmen and senators asking legislation to bring about this action.

Senator Ollie James is chairman of the Senate Committee on Patents.

We may be sure that the representatives in this country of these German-owned patents will use every influence they can bring to bear to save the profits for themselves. We shall have to be up and doing, if the interests of the American people are to be taken care of in this matter.

County societies and all other societies are earnestly urged to give this matter immediate attention.

J. W. VANDERSLICE, M.D.,
J. H. WALSH, M.D.,
W. A. PUSEY, M.D.,
Committee, Chicago Medical Society.

The following resolutions were unanimously adopted at the meeting of the St. Louis Medical Society, Saturday, April 7, 1917:

WHEREAS, Salvarsan is a drug which is of vital importance to the protection of health and to the saving of life, and

WHEREAS, The patent rights conferred on salvarsan and its congeners, have created a monopoly which has permitted a price to be placed

on the drug which makes it unavailable to tens of thousands of indigent sick in this country, and

Whereas, The drug has hitherto been supplied to this country from foreign shores, and the supply during the war has been uncertain and insufficient, and

Whereas, The patents have prevented the preparation and distribution of the drug in this country by American laboratories, and

Whereas, the patents conferred are operating against the health interests and the public welfare of this country; therefore be it

Resolved, By the St. Louis Medical Society, in session assembled, that Congress be earnestly urged to abrogate or at least suspend the patents on salvarsan and its closely related products.

Martin F. Engman, M.D.,
Cyrus E. Burford, M.D.,
J. Curtis Lyter, M.D., St. Louis.

SOME FACTORS IN MILK SUPPLY

To the Editor:—In three recent issues of The Journal (Nov. 4, 1916, Jan. 27, 1917, and Feb. 3, 1917) appeared editorials dealing with different aspects of the question of milk production. Recent investigations into the modus operandi of the processes of anabolism have placed the unsolved problems of milk production in a clearer light and enable us to measure the extent of our proved knowledge. The dairy cattle of Germany have recently been subjected to an experiment in rationing on such a large scale as to make the results of interpretative importance despite the fact that controls were necessarily and obviously lacking. I venture, therefore, to present in a tentative manner the results of the abnormal rationing of the dairy cattle of Germany in their bearings on the problems of milk production as discussed in your editorials.

The proved facts in milk production, derived in part from dairy experience and in part from experimentation, are as follows:

1. The quality of the milk is determined by the breed. The milks of Jersey and Holstein herds vary sufficiently to permit classification by the chemist.

2. The quantity of milk varies with the breed and with families within the breed. High quantitative producers breed true, just as trotters and pacers breed true.

3. It is not possible to any material extent (certainly not to a commercial extent) to modify the quality of the milk (that is, the percentage of fat, sugar and protein) by modification of the diet.

4. The quantity can be increased to the maximum of the production of the particular individual or family solely through the supply of the nutrient ingredients in adequate amounts.

5. The milch cow may be regarded as a machine within a machine. The external machine (the metabolism of the cow) requires, let us say, 250 gm. of protein and 6,000 calories in carbohydrate and fat for maintenance. The machine within the machine (the milk secretion) requires the administration of an amount of protein corresponding in nitrogen to the total protein of the milk plus carbohydrate and fat in such amounts as to cover the fat and lactose content; for example, 1 kg. of protein plus carbohydrate and fat worth 16,000 calories.

6. The cow possesses no noteworthy power of synthesis of amino-acids. The ration must, therefore, contain proteins that are balanced and must contain in quantity (in excess of maintenance requirement) the protein corresponding to the total protein of the milk. Under the influence of the chemical impulse, especially early in lactation, a cow may compensate for unbalanced protein and deficient protein in the ration by robbing her own tissues quantitatively and qualitatively, just as the anadromous fishes build up milt and eggs through utilization of muscle. This power of substitution is, however, according to recent investigations, probably not of large extent, and is in any event fraught with danger to the animal. There is evidence suggesting that the milk production and the tissues of the cows have in some instances in Germany suffered as a result of continuous subsistence on unbalanced proteins.

7. Butter fat can be formed either from carbohydrate or from fat in the diet. In many dairies no fat is fed whatsoever and all the butter fat represents synthesis from carbohydrate. In some dairies protein is fed to such excess as to act as substrate for fat, a wasteful conversion, as 100 parts of protein yield, via sugar, only 30 parts of fat. That triglycerids in the food pass into the milk more or less unchanged is an established fact, known for carnivora as well. If an emaciated female dog is fattened rapidly on fat mutton, the body fat of the animal will present a melting point much closer to that of mutton tallow than to that of normal dog fat. If under such circumstances a litter is thrown, the fat of the milk will also present a high melting point.

8. The green vegetation of spring contains substances that act as stimuli to the milk secretion, other ingredients in the diet being constant.

Your editorials dealt with the relation of balanced and unbalanced protein to the anabolism of the proteins of the milk; with the question of the dependence of milk fat on food fat and body fat, and with the factors of nervous and chemical stimuli to lactation.

The blockade of Germany has exhibited one of its most destructive operations in the exclusion of concentrated feeding stuffs from the dairies of Germany. According to the data collected by German scientists, German dairy cattle received during the year 1913, from imported concentrates, protein and fat to the extent of some 700,000 and 300,000 tons, respectively. One of the most striking features of the agricultural situation of Germany was the disproportion between the number of cattle and the acreage devoted to pasture, rotation grasses and roughage. During the past twenty years the production of beef and dairy products has increased out of all proportion to increase in lands devoted to pasture, rotation grasses and hay. Each decade, therefore, the German producer of beef and dairy products depended more and more on imported concentrates. It is in this country the custom to feed to milch cows, in the form of grain concentrates largely, the protein required for milk production, leaving to carbohydrate almost entirely the rôle of covering the needs for lactose and fat. In Germany, however, it has become within recent years more and more the practice to substitute in part fat for carbohydrate in the intake, so that the large dairies of Germany were at the outset of the war directly dependent on imported concentrates not only for protein, but also to a surprising extent for fat. The tendency to feed fat in part, rather than carbohydrate solely, plus the required protein finds a direct analogue in human nutrition. The man who is doing a day's work requiring 3,000 or 4,000 calories will find no difficulty in covering his needs by the ingestion of carbohydrate alone plus the required protein for upkeep; but when increasingly larger amounts of work are done, up to 6,000 or more calories, the worker naturally turns to fat, because the bulk of a diet that is to furnish such large numbers of calories becomes burdensome, if the heat needs are to be covered by carbohydrate alone. From the standpoint of digestion it is wiser to cover the large caloric needs by a mixture of fat and carbohydrate than by carbohydrate alone; and although the alimentary tract of herbivora cannot be compared, from this point of view, directly with the alimentary tract of omnivora, yet in general the experience of the German dairies tended to show definitely that for large production it was not only practicable but advantageous to administer a portion of the carbonous feed in the form of fat.

The crop of 1915 was low in all feeding stuffs and particularly low in the fodders that contain largely carbohydrate. Calculation of the production of feeding stuffs in the German Empire for that year indicates that in terms of energy, the feeding stuffs of that year available were not in excess of 65 per cent. of the normal. In other words, the dairymen faced loss of protein through abolition of importation, loss of fat through abolition of importation, and a striking reduction in carbohydrate through failure of the roughage crops. In attempting to meet this situation they could compensate in part for the lack of protein by diverting to cattle-feed waste protein that previously went to the soil as fertilizer. They had, however, nothing to substitute for the fat previously imported, and they had little to take the place of the carbohydrate of which they had been deprived through crop

failure. Lack of silage and low yield of fodder roots accentuated the stringency. Under these circumstances it was not surprising that the milk production of Germany during 1915-1916 fell to a level variously estimated at from 45 to 55 per cent. of the normal. The total milk production of Germany in the year 1916 was not larger than the amount that in peace time went to butter making alone. The sum total of this experience tends clearly to substantiate the view that unless the food intakes are balanced in every direction, or convertible, the total milk production falls.

Faith in the chemical (really biochemical) impulse as determining the production of milk during the early months of lactation was widely held in Germany, and was the basis for the belief that in the spring of 1916 the new flow of milk, aided by the green feed, would result in a large increase in milk production. These predictions and hopes were not fulfilled. The cattle came through the winter in very poor condition. When they calved in the spring, the cows were emaciated. When they were placed on the abundant green feed that did develop early in the spring, contrary to the expectations the excess feed went into the tissues of the cow (into the external machine) rather than into the milk production (the internal machine). One views here what really amounts to competition between the growth impulse and the milk secretion. Growth is largely dimensional, dimensional in the sense that the cells of an adult animal possess a certain size and contain a certain amount of protein in the form of protoplasm. If now these cells, from subnutrition, become depleted, they are, so to speak, returned to a state corresponding to adolescence. When nutrients to the extent of normal maintenance are again available, the dimensional growth impulse strives to utilize these nutrients for the restoration of the normal masses of the cells. That the biologic impulse of milk secretion is extremely strong is clear from many investigations, and has been made very obvious in recent studies in which it was shown that the calcium elimination of milk in forced milk production was so high as to be in excess of calcium assimilation of the animal's alimentary tract and was obtained in part from the body of the animal. Nevertheless, the experience in Germany indicated that when applied to a large group of animals, many of whom were confessedly nondescript and not of highly bred milk strains, the biochemical impulse did not result in an increase of milk production; instead, the animals repaired their lost tissues, just as in the ordinary beef types of cattle the impulse in the direction of fleshening is naturally stronger than in the direction of milk production. The quality of the milk under the varying conditions fluctuated surprisingly little. A lowered fat production was observed, at times to quite an extent; but otherwise the experiences of the dairies during the two extremely trying years indicated that the quality of milk was representative of the anabolism of the particular animal, family or breed and tended to be independent of the intake. Most consistent was the casein production. The falling-off in production that is prone to occur late in the period of lactation was exaggerated in undernourished animals.

In the editorial devoted to the relation of fat in the diet to fat in the milk, there was not sufficient segregation of the ingredients grouped under butter fat to make the points under discussion entirely clear. These ingredients may be divided into the triglycerids, the flavoring and coloring matters and the lower fatty acids. Apart from the direct transfer of certain flavoring and coloring matters from the diet to the milk, there can be no question that the mammary glands tend to stamp the milk so far as taste and color are concerned. This is most clearly indicated by the definite differences in the taste and color of the fat of the milk of cows, goats and sheep on the same rations. There is also no question of the fact that the content in lower fatty acids tends to be specific. On the other hand, the investigations quoted in your editorial are not sufficient to indicate that milch cows convert one triglycerid into another to any large extent. The appeal to the modern theory that fats are split in digestion does not concern the point at all, since that same theory predicates that they are resynthesized in the intestinal wall. There is evidence to the effect that the triglycerids of the thoracic duct are different from the triglycerids of the diet; but there is, of course, an uncontrollable variable in the experiment. It is also true that while altering the fat intake modifies the melting point of the butter fat of the animal, yet on the whole an increase tends to produce butter of a more or less constant melting point. The extent to which, for example, tristearin in the diet is converted into tripalmitin, or triolein into tristearin, has not been experimentally shown, nor is it to be calculated from any of the data at present available in the literature.

The development of goat dairies is being actively encouraged in Germany. This is due not directly to the fact that the browsing goat makes lesser claims than the grazing cow. It is due rather to the fact that the maintenance for the number of goats required to produce a unit of milk is lower than in the case of cows; the ratio of maintenance to milk production is more favorable.

ALONZO ENGLEBERT TAYLOR, M.D., Philadelphia.

VISUAL REQUIREMENTS OF MILITARY AVIATORS

To the Editor:—The article on this subject (THE JOURNAL, March 17, 1917, p. 841) is certainly a timely one; however, some questions have arisen in my mind during the reading of it.

1. Why make color blindness a reason for rejection? The writer points out that an air scout would not detect "red uniforms of soldiers from the surrounding green foliage, even in the most favorable conditions, if he is red-green blind." But may I ask: Where at the present time are red uniforms to be seen, outside of the parade grounds? As scout, the chief function is to take "large numbers of photographs of the enemy's position." What has color blindness to do with this? Many color-blind men know so well how to take advantage of secondary circumstances (shade, luster or luminosity) that their defect is never recognized except by careful examination.

2. As the first and chief requisite must be normal vision ($^{20}/_{20}$) for each eye uncorrected, I cannot see that "a cycloplegic should be used in all cases." This shows a serious incompetence. When an ophthalmologist (and we cannot expect any other medical man to do this most specific work) is unable to examine the iris reaction, or the presence of synechiae, or the vitreous for opacities, or the fundus for changes in young persons without a cycloplegic, when the vision is $^{20}/_{20}$, such a one ought never to receive the certificate from the self-constituted American board of hypercompetent examiners for the license to practice ophthalmology.

3. "Even with normal vision in each eye, the aviator must have normal binocular vision," etc. Will you kindly tell me what the value of binocular single vision (I suppose it is this function to which the writer refers) is at the height at which aviators usually take their soundings? How does the writer convince himself of the presence of binocular single vision? In what terms does he express his findings?

I think that all physicians are sufficiently interested in these fundamental questions to justify ventilation of the topic of the visual requirements for aviators.

EDMOND BLAAUW, M.D., Buffalo.

[The foregoing communication was referred to Dr. Small, who replies:]

To the Editor:—When this paper was read before the Chicago Ophthalmological Society, I stated that I was not presenting any particularly new facts, but that my chief purpose was to point out the unusual conditions arising in this new field in order to get suggestions or criticisms and thus be able to make this branch of our military service as efficient as possible. I therefore wish to thank Dr. Blaauw for his criticism and am perfectly willing to abide by the judgment of other oculists in regard to these or other points in this subject. I can only state my personal opinion on the three points he discusses:

1. Normal color sense is absolutely essential. The particular illustration used was simply to call attention to the

inability of this form of color-blind person to distinguish between red and green. Much important work is done at night; red and green are the two colors most frequently used in signal lights. I can easily conceive of most disastrous results from a pilot's inability even to see these lights at a little distance. Again, figures, letters or designs of various kinds are painted on the planes as distinguishing marks. Failure to recognize these quickly might have grave consequences. I see no reason why the duties of the air pilot require any less keen color perception than do the duties of the sea pilot.

2. It is not so very infrequent that we find a young man whose manifest refraction is $^{20}/_{20}$, but whose absolute refraction under a cycloplegic is as low as $^{20}/_{70}$. Such a man, engaged in this work, will probably show rapidly increasing symptoms of eye strain, if his ametropia remains uncorrected. With a record of his absolute refraction on file, a reexamination may determine his unfitness for continuing in this service. The fundus can be studied with much greater accuracy through the dilated pupil. My ophthalmoscopic technic may be faulty, but I confess my inability to get, for example, in a beginning retinitis pigmentosa, a satisfactory picture of the periphery of the fundus, without the aid of a mydriatic. It is absolutely impossible to detect the amount and extent of posterior synechiae, without artificially dilating the pupil.

3. An aviator, after being in the air for an hour or more, with his nerves under pretty high tension, being then obliged to make a rapid descent, would require a rather keen sense of perspective to avoid striking the ground with damaging force. I maintain that without binocular single vision, stereoscopic vision, or sense of perspective, is wanting. I make it a part of every routine examination to estimate and record the amount of adduction, abduction, and the muscle balance for distance and at 33 cm. using Stevenson's tangent method for the last, which also serves to determine the presence or absence of binocular single vision.

CHARLES P. SMALL, M.D., Chicago.

DUODENAL CULTURES IN TYPHOID FEVER

To the Editor:—In THE JOURNAL, March 10, 1917, p. 780, Dr. Durham, in his article on the isolation of the typhoid bacillus from duodenal contents, says, "To the best of my knowledge and information, this is the first time that duodenal contents, secured by the use of the duodenal tube, ever gave a positive *Bacillus typhosus* culture." I wish to call attention to my own article published in THE JOURNAL, Nov. 18, 1916, p. 1493.

A. L. GARBAT, M.D., New York.

REMOVAL OF URETERAL CALCULUS BY CYSTOSCOPIC METHOD

To the Editor:—In his article on this subject (THE JOURNAL, April 7, 1917, p. 1028), Dr. William S. Ehrich desires to know why the treatment of small ureteral calculi by operative cystoscopy and ureteral dilatation has not supplanted the open operation. The answer is that this more rational method of ureteral calculus removal has supplanted the open operation, and has been used for many years past by leading urologists throughout the country. Dr. Ehrich would certainly be aware of this fact had he reviewed the urologic literature of the past few years. An open operation is the exception today in the management of ureteral calculus.

H. W. E. WALTHER, M.D., New Orleans.

Medical Compounds in Madagascar.—The French customs tariff require medical compounds imported into Madagascar to pay a specific duty of 20 per cent. ad valorem maximum and 15 per cent. minimum. Merchandise from the United States is dutiable at the higher rate. Medical compounds not mentioned in any pharmacopeia are prohibited. Wholesale houses in Madagascar do not sell medicines or preparations to the various pharmacies and general stores on the island. Such goods are ordered direct by pharmacists in the leading centers.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CITRIC ACID—SERGENT'S LINE—HUMIDITY

To the Editor:—Please favor me with answers to the following questions:

1. Does the ingestion of fruit acids, notably those of the citrus fruits, tend to decrease the alkalinity of the blood?
2. Do these fruits have a deleterious effect in nephritis, especially in chronic cardiorenal conditions?
3. What is their effect on the reaction of the urine?
4. What is the effect of sodium citrate, potassium citrate and potassium acetate on the alkalinity of the blood and urine?
5. Can you refer me to any recent literature on this subject?
6. What is Sergent's "white line" in suprarenal insufficiency?
7. Is there any practical method for humidifying the air in dwelling houses in winter?

Kindly do not use my name. F. A. B.

ANSWER.—1. The citrus fruits contain in their juices citric acid. Citric acid and its salts—potassium and sodium citrate—are oxidized in the body with the formation of carbonates. Hence they tend to increase the alkalinity of the blood.

2. It is not likely that these fruits, taken in moderation, would have a deleterious effect in nephritis. In general, it is not advisable to give diuretics in cardiovascular renal disease. Potassium citrate has a diuretic action. However, if an alkaline effect is needed, this drug may be given.

3. The ingestion of citric acid tends to make the urine alkaline.

4. Sodium citrate, potassium citrate and potassium acetate tend to keep the blood alkaline, and the salts excreted by the kidneys render the urine less acid, and after large doses, alkaline. All of these drugs act as diuretics and may be used in nephritis although, as stated, it is generally not advisable to give diuretics in cardiovascular renal disease.

5. The use of these drugs is described in practically all textbooks on pharmacology. We may refer you particularly to H. C. Wood: Pharmacology and Therapeutics, Edition 2, Philadelphia, J. B. Lippincott Company, 1916, p. 271; Useful Drugs, American Medical Association, 1916, pp. 112 and 113; Hatcher and Wilbert: The Pharmacology of Useful Drugs, 1915, pp. 417 and 418; Sollmann: A Manual of Pharmacology, Philadelphia, W. B. Saunders Company, 1917, p. 729.

6. Sergent's "white line" in suprarenal insufficiency is a vasomotor phenomenon. A geometric figure is traced on the skin of the abdomen with a blunt object, such as the rounded end of a fountain pen or a finger tip. In about thirty seconds a pale line or band may be noticed over the course traced. This gradually becomes more distinct and wide, attaining its maximum clearness in about one minute and lasting for about two or three minutes. The author states that it is significant of suprarenal insufficiency. The normal reaction is a red line; "white dermographism" probably indicates vasomotor instability.

7. The use of humidifiers is discussed in "The Relation of Atmospheric Humidity to Health," editorial, THE JOURNAL, March 17, 1917, p. 852.

ALUM AND PHOSPHATE CONTENT OF BAKING POWDERS

To the Editor:—Please give me a report on Royal baking powder and on Dr. Price's baking powder as to the alum and phosphate content.

W. J. AVERY, M.D., St. Louis.

ANSWER.—According to the analyses made by the North Dakota food department in 1913, neither Dr. Price's baking powder nor the Royal brand contains either alum or phosphate. They belong, instead, to what is known as the "cream of tartar" type of powders, that is, powders from which the carbon dioxid is set free by the action of potassium bitartrate (cream of tartar) and tartaric acid on sodium bicarbonate (baking soda). From the analyses referred to above, the North Dakota food department calculated the probable original composition for the powders analyzed. The formulas for the two powders mentioned were calculated to be approximately as follows:

	Baking Powder	
	Dr. Price's	Royal
Sodium bicarbonate (baking soda)	24	24
Potassium bitartrate (cream of tartar)	38	41
Free tartaric acid	6	5
Starch	29	28
Water (undetermined)	3	2

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 8-9. Sec., Dr. T. J. Stout, Brinkley, Ark.

ARKANSAS, ECLECTIC: Little Rock May 8. Sec., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith.

ARKANSAS, HOMEOPATHIC: Little Rock, May 8. Sec., Dr. Scott C. Runnels, Little Rock.

GEORGIA: Atlanta and Augusta, May 31-June 2. Sec., Dr. C. T. Nolan, Marietta.

HAWAII: Honolulu, May 7-10. Chairman, Dr. R. W. Benz, 1141 Alakea St., Honolulu.

ILLINOIS: Chicago, May 3-5. Sec., Dr. C. St. Clair Drake, Springfield.

MASSACHUSETTS: Boston, May 8-10. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

NEVADA: Carson City, May 7. Sec., Dr. S. L. Lee, Carson City.

NEW YORK: Albany, Buffalo, New York, and Syracuse, May 22-25. Sec., W. J. Denno, Education Bldg., Albany.

Nebraska May-June Report

Dr. H. B. Cummins, secretary of the Nebraska State Board of Health, reports the oral, practical and written examinations held at Lincoln, May 10-11 and June 8-9, 1916. The total number of subjects examined in was 12; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 40, all of whom passed. Thirteen candidates were granted reregistration licenses by examination. Eighteen candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College		(1915)	84.2
John A. Creighton Med. College	(1915) 83.9; (1916) 75, 76.4, 76.5, 77.1, 78, 78.4, 78.9, 79.2, 79.2, 80.1, 80.4, 80.4, 80.5, 80.9, 80.9, 81.1, 81.1, 81.4, 81.6, 82, 82.1, 82.4, 82.5, 82.5, 82.9, 83.1, 83.9, 84.1, 84.2, 84.4, 84.6, 84.7, 85.9, 86.5, 87.2, 89.1.		
Lincoln Medical College		(1910)	75.1

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Medical College of Alabama		(1906)	Mississippi
Chicago Homeopathic Medical College		(1895)	Iowa
College of Physicians and Surgeons, Chicago		(1910)	Illinois
Northwestern University		(1911)	Illinois
Rush Medical College	(1889) Iowa; (1911, 2)	(1914)	Illinois
State University of Iowa, Coll. of Med.		(1886) (1905)	Iowa
Tulane University of Louisiana		(1914)	Nevada
Johns Hopkins University		(1909)	Iowa
Ensworth-Central Med. Coll. of St. Joseph		(1906)	Kansas
St. Louis University		(1910, 2)	Missouri
Eclectic Medical College		(1902)	Ohio
Medico-Chirurgical College of Philadelphia		(1900)	Iowa
Universities of Nashville and Tennessee		(1911)	Tennessee

Illinois October Report

Dr. C. St. Clair Drake, secretary of the State Board of Health of Illinois, reports the written examination held at Chicago, Oct. 10-12, 1916. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 115, of whom 88 passed and 27 failed. Eight candidates did not complete the examination. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Licensed
Howard University		(1914)	1
Bennett Medical College		(1915)	2
Chicago Coll. of Med. & Surg.	(1915, 2); (1916, 31)		33
Chicago Hospital College of Medicine		(1915) (1916)	2
Hahnemann Med. Coll. and Hosp. of Chicago		(1916)	1
Jenner Medical College		(1916)	2
Loyola University		(1916)	18
Northwestern University		(1916)	2
Rush Medical College		(1903) (1914) (1916, 9)	11
University of Illinois		(1916)	6
Indiana University		(1916)	1
State University of Iowa Coll. of Med.		(1907) (1916)	2
Johns Hopkins University		(1915)	1
Detroit College of Medicine		(1904)	1
University of Michigan Medical School		(1909)	1
St. Louis University		(1915)	1
University of Pennsylvania		(1903)	1
Vanderbilt University		(1916)	1
Medical College of Virginia		(1906)	1
	FAILED		
Bennett Medical College		(1910) (1915, 2)	3
Chicago College of Medicine and Surgery		(1915) (1916, 7)	8
Chicago Hospital College of Medicine		(1915, 2) (1916, 2)	4
Hahnemann Medical College and Hospital of Chicago		(1915)	1
Loyola University		(1916)	3
Reliance Medical College		(1911)	1
Hospital College of Medicine, Louisville		(1904)	1
National University of Arts and Sciences		(1916)	1
St. Louis College of Physicians and Surgeons		(1910)	1
University of Pennsylvania		(1896)	1
National University, Athens		(1884) (1905)	2
Female Medical Institute, Kharkof		(1914)	1

Porto Rico October Report

Dr. Quevedo Baez, secretary of the Porto Rico Board of Medical Examiners, reports the written examination held at San Juan, Oct. 3, 1916. The total number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examind was 29, of whom 21 passed, and 8 failed. The following collges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University		(1916)	79.7
Atlanta Medical College		(1916)	75
Bennett Medical College		(1915)	75
Chicago College of Medicine and Surgery	(1916) 76.3, 80.6, 81.5.		
Loyola University		(1916)	75.2
University of Maryland	(1916) 75.8, 77, 77.6, 79.8, 81.2.		
Harvard University		(1916)	81.5
University of Nebraska		(1916)	75.8
Jefferson Medical College of Philadelphia		(1916)	76.8, 92.8
Medico-Chirurgical College of Philadelphia		(1916)	75
Temple University		(1916)	78.7, 80.4
Medical College of Virginia		(1915)	75
University of Santiago, Spain		(1915)	79.2
	FAILED		
Chicago College of Medicine and Surgery		(1915)	65.1
Loyola University	(1915) 65.6; (1916) 66.6, 67.1, 69.7, 69.8.		
University of Maryland		(1916)	68.7
University of the City of New York		(1889)	61.7

Missouri December Report

Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, reports the oral and written examination held at St. Louis, Dec. 11-13, 1916. The total number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 14, of whom 9 passed and 5 failed. Four candidates were granted reregistration licenses. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Loyola University		(1916)	77
University of Illinois		(1916)	77, 86
Harvard University		(1914)	87
American Medical College		(1904)	75
Ensworth Medical College		(1911)	88
National University of Arts and Sciences		(1916)	78
Meharry Medical College	(1916) 81;	(1917)	81
	FAILED		
Chicago College of Medicine and Surgery		(1916)	70
National University of Arts and Sciences		(1916)	70
St. Louis College of Physicians and Surgeons		(1910)	70
University of West Tennessee		(1915)	65, 70

Alabama January Report

Dr. W. H. Sanders, chairman of the Alabama State Board of Health, reports the written examination held at Montgomery, Jan. 9-12, 1917. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 22, of whom 12 passed and 10 failed. One candidate was granted a license under a special exemption clause. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Alabama		(1916)	76.5
Atlanta Medical College	(1916) 79.9, 84.6, 86.4.		
Tulane University of Louisiana		(1915)	83.5
Johns Hopkins University		(1914)	87.5
Washington University		(1910)	76.9
University of Pennsylvania		(1911)	80.5
University of Tennessee		(1916)	75
Vanderbilt University		(1915)	78.3, 82.8
	LICENSED UNDER SPECIAL EXEMPTION CLAUSE		
Kentucky University		(1906)	1
	FAILED		
Birmingham Medical College	(1915) 57.1, 65.1, 67.5.		
Atlanta Med. College		(1915)	72.8; (1916) 71.1
Tulane University of Louisiana		(1909)	72.5
Meharry Medical College		(1916)	55.4, 70.3
Memphis Hospital Med. College		(1899) (1911)	69.9, 64

Book Notices

The Diseases of Infancy and Childhood. For the Use of Students and Practitioners of Medicine. By L. Emmett Holt, M.D., Sc.D., LL.D., Professor of Diseases of Children in the College of Physicians and Surgeons, New York, and John Howland, A.M., M.D., Professor of Pediatrics in the Johns Hopkins University. Seventh Edition. Cloth. Price, $6. Pp. 1180, with 215 illustrations. New York: D. Appleton and Co., 1916.

The sixth edition of this book appeared in 1911, at which time Dr. Howland, who assisted Dr. Holt in the preparation of the book, was professor of the diseases of children at Washington University Medical School, St. Louis, following his work with Professor Holt in New York. Dr. Howland now appears as co-author with Dr. Holt, writing from his position as professor of pediatrics at Johns Hopkins University, Baltimore.

Needless to say, in the five years which have elapsed since the appearance of the last edition, there have been many advances in our knowledge of pediatrics, and these advances are recorded in the new edition. The seventh edition contains, including index, but sixty-eight pages more than the sixth edition. To make room for the new material, some of the old has been eliminated and much rewritten. The authors state that so much revision was necessary that scarcely a page appears as it did before, and the book has been entirely reprinted from new plates. Attention is called to sixteen new articles, among them those on acidosis, neuropathic and exudative diathesis, cardiac arrhythmia, acute lymphatic leukemia, Banti's disease, osteogenesis imperfecta, Still's disease, syphilis of the nervous system, pellagra, epidemic catarrh, duodenal ulcer, and idiosyncrasies to foodstuffs. In addition, special attention has been given to the chapters on birth paralyses, milk and infant feeding, digestion in infancy, chronic intestinal indigestion, Hirschsprung's disease, asthma, accidental heart murmurs, hydronephrosis, gonococcus vaginitis, tetany, convulsions, epilepsy, hydrocephalus, poliomyelitis, diseases of ductless glands, diabetes, Hodgkin's disease, and tuberculous adenitis.

The book follows in general the same plan as previous editions. As the arrangement in those was eminently satisfactory, there was of course no need for a change. In eliminating some of the illustrations, the authors have wisely chosen those illustrating apparatus, such as scales and nipples, which are familiar to every one.

The book bears throughout evidences of careful and thorough revision. The new material which has been added is fully up to the standard of the old. It is a valuable guide to the conditions it covers.

A Laboratory Manual of Organic Chemistry for Medical Students. By Matthew Steel, Ph.D., Professor of Organic and Biological Chemistry, the Long Island College Hospital. Cloth. Price, $1.25 net. Pp. 193. New York: John Wiley & Sons, 1916.

There has been a tendency to differentiate between chemistry as ordinarily taught and chemistry for medical students, although it is debatable whether or not the elementary courses in chemistry should differ for various students. Dr. Steel's book is the development of the instructions given to the students in Long Island College Hospital, Brooklyn. Not only are the various properties of organic compounds discussed, but the subject is presented in such a manner as to classify the book almost as a qualitative organic analysis. One objection which might arise is that the student who follows the "practical course," as outlined by Steel, may lack some of the essential technical operations which he would otherwise have obtained when taking the usual laboratory course in organic chemistry, in which more or less elaborate synthetics are prepared. Steel, like many authors of laboratory manuals, seems to think that it is an added advantage to have alternate pages blank in order that the observations may be recorded. It is to be hoped that sooner or later this "conventionality" will be discarded, as it surely stifles critical observation—the student endeavoring to note the results of the experiments on an allotted short page. The book is divided into twenty-seven chapters, and contains an appendix of tables. Besides an outline of experiments on the usual class of organic compounds, there are also presented valuable tests for the lipins, proteins and alkaloids—a group of subjects which is of more than casual interest to the future physician.

Medicolegal

Construction of Exception for Practice of the Religious Tenets of Any Church

(*People vs. Cole* (*N. Y.*), *113 N. E. R. 790*)

The Court of Appeals of New York reverses the judgment and orders a new trial in this case, wherein the defendant was convicted of the crime of practicing medicine without lawful authorization and registration, because of a misconstruction of the exception to the statutory definition of who practices medicine that "this article shall not be construed to affect . . . the practice of the religious tenets of any church." The court says that the exception includes every person in the practice of the religious tenets of any church, and it is not in any way in conflict with the federal or state constitution. The language quoted is not in any sense an affirmative license. It is an exception to the general prohibition. Whether the practice of the religious tenets of any church should have been excepted from the general prohibition against the practice of medicine unless the practitioner is registered and authorized so to do, or whether the exception should be continued therein is a question for the legislature and not for the courts. The purpose of the general statute is to protect citizens and others of the state from being treated in their physical ailments and diseases by persons who have not adequate or proper training, education or qualifications to treat them. The tenets of a church are the beliefs, doctrines and creeds of the church. The exception relates to the tenets of the church as an organized body as distinguished from an individual. It does not relate to or except persons practicing in accordance with individual belief. The defendant was a member of the Christian Science Church. The Christian Science Church is in terms expressly excepted from the prohibition contained in the medical practice acts of many of the states. It is so expressly excepted in the statutes of Maine, New Hampshire, Massachusetts, Connecticut, North Carolina, North and South Dakota, Kentucky, Tennessee and Wisconsin. The court thinks the exception in the New York statute is broad enough to permit offering prayer for the healing of disease in accordance with the recognized tenets of the Christian Science Church. It may be said that if the exception is so construed, it will lead to numberless persons assuming to cure diseases in the name of a church for the purpose of thereby maintaining a business and securing a livelihood. But the religious tenets of a church must be practiced in good faith to come within the exception. When such practice is a fraud or pretense, it is not excepted from the general prohibition. When wrong is practiced in the name of religion, it is not protected by constitution or statute. A person should not be allowed to assume to practice the tenets of the Christian Science or any church as a shield to cover a business undertaking. When a person claims to be practicing the religious tenets of any church, particularly when compensation is taken therefor and the practice is apart from a church edifice or the sanctity of the home of the applicant, the question whether or not such person is within the exception should be left to a jury as a question of fact. It was error to charge the jury in this case that if they found from the evidence that the defendant did engage in the practice of medicine as alleged in the indictment, within the definition which the court had given to them, it was no defense that he did what he did from any sense of duty, or that he did these acts in the practice of the religious tenets of the Christian Science Church. The exception was intended by the legislature to exclude from the prohibition the practice of the religious tenets of the Christian Science and other churches. It was necessary, as we have seen, that

the practice be of the tenets of a recognized church, and the court, instead of charging the jury as stated, should have left to the jury the question whether or not the defendant was in good faith practicing the tenets of such a church within the meaning of the statutory exception.

Misstatements of Physicians Ground for Relief from Releases

(Chicago, R. I. & P. Ry. Co. vs. Rogers (Okla.), 159 Pac. R. 1132)

The Supreme Court of Oklahoma, in affirming a judgment for $1,001 in favor of plaintiff Rogers for damages for a burn and injury to his right leg while he was in the service of the defendant company, for which he had signed a release, says that the plaintiff was advised by the defendant's claim agent that the physicians of the company had reported the injury as merely a skin wound, and that it was not permanent. He was advised by two physicians of the company that the injury was merely a skin wound, and not permanent. He was advised by one of those two physicians that he would have a good leg and would be able to perform labor to the extent and in the capacity he did prior to the injury. The plaintiff was a mere employee of the company. He had no knowledge of medical science. He could not judge of the effect of a burn as to its permanency or its temporary character. He relied on the statements of the company's physicians to the effect that he would have a good leg, and, believing and relying on such statements, executed the release in question. In such cases innocent misrepresentations made in good faith and under an honest belief at the time made that they are true, on the one hand, and relied and acted on in good faith and under an honest belief of their truth, on the other hand, as well as statements made which are intentionally false and relied on by the party executing a release, may equally be made the basis of relief from such releases.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, NEW YORK, JUNE 4-8.

American Academy of Medicine, New York, June 4-5.
American Association of Anesthetists, New York, June 2.
Am. Assn. of Genito-Urinary Surgeons, Rochester, Minn., May 21-23.
Am. Climatological and Clin. Association, Lakewood, N. J., May 29-31.
American Dermatological Association, Cincinnati, May 24-26.
American Gastro-Enterological Assn., Atlantic City, April 30-May 1.
American Gynecological Society, Pittsburgh, May 31-June 2.
American Laryngological Association, Atlantic City, May 28-30.
Am. Laryn., Rhin. and Otol. Society, Niagara Falls, Can., June 1-2.
Am. Medico-Psychological Association, New York, May 29-June 1.
American Neurological Association, Boston, May 21-23.
Am. Ophthalmological Society, Virginia Hot Springs, May 29-30.
American Orthopedic Association, Pittsburgh, May 31-June 1.
American Otological Society, Atlantic City, May 29-30.
American Pediatric Society, White Sulphur Springs, May 28-30.
American Proctologic Society, New York, June 4-5.
American Psychopathological Association, Boston, May 24.
American Radium Society, New York, June 4.
American Society of Tropical Medicine, New York, June 4-5.
American Surgical Association, Boston, May 31-June 2.
American Therapeutic Society, New York, June 1-2.
Arkansas Medical Society, Little Rock, May 1-3.
Association of American Physicians, Atlantic City, May 2-3.
Conference of State & Prov. Bds. of N. Amer., Washington, May 30-31.
Connecticut State Medical Society, New Haven, May 23-24.
Florida Medical Association, Atlantic Beach, May 18-19.
Illinois State Medical Society, Bloomington, May 8-10.
Iowa State Medical Society, Des Moines, May 9-11.
Kansas Medical Society, Salina, May 2-4.
Maine Medical Association, Portland, June 12-13.
Maryland Medical and Chirurgical Faculty, Baltimore, April 24-26.
Massachusetts Medical Society, Boston, June 12-13.
Mississippi State Medical Association, Jackson, May 8-9.
Missouri State Medical Association, Springfield, May 14-16.
Nat. Assn. for Study and Prev. of Tuberculosis, Cincinnati, May 9-11.
National Assn. for the Study of Epilepsy, Skillman, N. J., May 28-29.
Nebraska State Medical Association, Lincoln, May 8-10.
New Hampshire Medical Society, Concord, May 16.
New York State Medical Society, Utica, April 24-26.
North Dakota State Medical Association, New Rockford, May 9-10.
Ohio State Medical Association, Springfield, May 14-16.
Oklahoma State Medical Assn., Lawton-Medicine Park, May 8-10.
South Dakota State Medical Association, Yankton, May 28-30.
Texas State Medical Association, Dallas, May 8-10.
Washington State Medical Association, Spokane, June 17-19.
Wyoming State Medical Society, Casper, May 9.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

April, XIII, No. 4

1 Amyotonia Congenita: Survey of Known Cases; Report of Three Cases. H. K. Faber, San Francisco.—p. 305.
2 *Epidemiology of Bacillary Dysentery. W. G. Smillie, Boston.—p. 337.
3 *Hypertension in Nephritis in Childhood; Study of Ninety-Three Cases. H. K. Berkley, San Francisco and J. M. Lee, Nashville, Tenn.—p. 354.

2. **Epidemiology of Bacillary Dysentery.**—Smillie reports the study of seventy-five cases occurring in Boston during the summers of 1915 and 1916. The nests of infection in certain portions of the south end, and in South Boston, are striking. Sanitary conditions are equally bad in the north end and west end, but the former neighborhoods are occupied largely by first generation Irish-Americans, and the latter by foreigners —Italians, Poles and Russian Jews. Most factors affecting the health of infants in both neighborhoods are the same, the same water, the same milk supply, the same temperature and humidity, and equal number of flies, etc. The only factor that is not common to both neighborhoods is food, for most foreign mothers nurse their babies, while many American mothers do not. One of the cases was a nursing baby. This child was nursed only at night and was fed condensed milk during the day. A study of the epidemiology of widely scattered and isolated cases, of which there were fifteen, showed that the only factor in common was a certain brand of condensed milk, although repeated examinations failed to disclose the dysentery bacillus in this milk. Nine cases were due to the use of ice cream cones. Twenty-seven cases were due to direct contact. Thus, though seventy-five cases were studied, the foci of infection of these cases were reduced to twenty-eight, and Smillie is convinced that more intensive study of the cases from unknown sources would have reduced the number of separate foci of infection still more. In every dirty, careless household visited, where the sick child remained more than one week, there resulted a contact care of bacillary dysentery. Smillie is of the opinion that bacillary dysentery is introduced into the community in the summer by a carrier, and once begun, other factors carry it on. Four babies developed bacillary dysentery in the wards of the hospital. Each child was admitted with quite a different diagnosis, and their stools were negative on entrance. Each developed the disease seven to ten days after admission, and in no instance did the child come from an infected home or neighborhood.

3. **Hypertension in Nephritis in Childhood.**—From a study of blood pressure observations in sixty-six cases of acute nephritis and twenty-seven cases of chronic nephritis in children between the ages of 2 and 12 years, Berkley and Lee say that the blood pressure is elevated in the nephritis of childhood, and occasionally to a marked degree. Systolic and diastolic pressures are not increased to the same degree, the former averaging about 20 mm. Hg, and the latter about 10 mm. above normal. The pulse pressure is increased, but the factor is not constant. The blood pressure may, in rare instances, be of prognostic value. No relation has been found to exist between the blood pressure and the urinary findings. Albuminuric retinitis is probably not common even in cases showing a marked increase in blood pressure.

American Journal of Public Health, Boston

March, VII, No. 3

4 Program of Public Health for Cities. W. C. Rucker, Washington, D. C.—p. 225.
5 Program of Public Health for Towns, Villages and Rural Communities. G. F. Ruediger, LaSalle, Ill.—p. 235.
6 Health Administration on District Plan. A. E. Shipley, New York. —p. 248.
7 Scientific Management and Its Relation to Health of Worker. R. A. Feiss, Cleveland.—p. 262.
8 Modern Chemical Industries and Public Health. F. E. Fronczak, Buffalo.—p. 268.

9 Munition Plant Poisons. A. Rice, Parlin, N. J.—p. 273.
10 Dangers Connected with Spray Method of Finishing and Decorating. R. P. Albaugh, Cleveland.—p. 279.
11 *Facts and Fallacies in Disinfection. H. C. Hamilton, Detroit.—p. 282.
12 Institutional Sewage Plants. C. F. Mebus, Philadelphia.—p. 296.
13 Refuse Disposal in Small Towns. G. W. Simons, Jr., Jacksonville, Fla.—p. 299.
14 Acupuncture; Best Method of Vaccination. H. W. Hill, London.—p. 301.

11. Facts and Fallacies in Disinfection.—A rather extensive experimental laboratory study of disinfectants made by Hamilton shows that formaldehyd, when used under conditions in which the gas acts in an aqueous solution, is an efficient disinfectant, probably the only generally applicable fumigant. Mercuric iodid combined with potassium iodid is an exceptionally valuable germicide for the skin and for disinfecting surgical instruments and vessels. Its germicidal value is 5,000 times as high as that of phenol. Lime water freshly slaked from good stone lime has high germicidal value, but its objectionable features both in itself and in its action on other disinfectants makes it use more or less detrimental. Soap can be considered valuable only as an aid to disinfection or as a vehicle for an active agent. Most disinfectants with the exception of mercuric potassium iodid add little to the efficiency of soap. Alcohol as commonly used, that is, on the skin previously washed with soap and water, is highly efficient in percentages of 30 or over. A coal tar disinfectant carefully standardized by one of the accepted methods is valuable in proportion to its phenol coefficient, and is less affected than some others by the factors which tend to inhibit the value of a germicide. Pine oil disinfectants and other special products require as careful standardization as the coal tar disinfectants. For safe use the dilution should not exceed a number representing the result of the phenol coefficient times the dilution of pure phenol which would be used with confidence under similar conditions. Certain of the anilin dyes give promise of practical value in wounds and as internal antiseptics because of having a selective action toward certain micro-organisms and because of their low toxicity. The old dependable germicides, mercuric chlorid, phenol, iodin, hydrogen peroxid, will never be displaced, but undoubtedly their field of usefulness will become more and more restricted.

American Review of Tuberculosis, Baltimore

March, I, No. 1

15 Various Classifications of Pulmonary Tuberculosis. W. L. Rathbun, New York.—p. 1.
16 *Chronic Nontuberculous Lung Infection. A. H. Garvin, H. W. Lyall and M. Morita, New York.—p. 16.
17 Serologic Studies in Tuberculosis. S. A. Petroff, New York.—p. 33.

16. Chronic Nontuberculous Lung Infection.—The material for this study consisted of nine cases of chronic nontuberculous lung infection of long standing, four years or more, and is of interest inasmuch as a careful history and physical examination had previously determined the diagnosis as tuberculosis. The disproof of the diagnosis of tuberculosis was justified after long study, comprising a review of the factors in the history, frequent physical examination, roentgenograms of the chest, and repeated bacteriologic study of the sputum. The principal differential diagnosis to be made is that from pulmonary tuberculosis. There will usually be observed a very striking disparity of these points in favor of chronic nontuberculous lung disease and against tuberculosis except at such times as acute exacerbations occur, when the differential diagnosis will not be possible and the diagnosis will be that of tuberculosis, because symptoms or signs, or both, strongly suggest it. Usually the duration of the disease is clinically longer, with less severity of effect on the patient, than would be expected if the disease were tuberculosis. Base lesions in tuberculosis are usually quite toxic and progressive. Base lesions of chronic nontuberculous type are rather nontoxic and nonprogressive. The general health appears to be much more satisfactory than would be expected if the patient were tuberculous. As regards location, 90 per cent. of all tuberculous lesions are located in the apices, or upper lobes of the chest, and but 10 per cent. in the lower lobes. In chronic nontuberculous lung infection, the reverse of this is true. The physical signs will be at considerable variance to what might be expected if the condition were tuberculous. Two extremes may be met. There are either a large number of rather moist râles and ronchi, with only moderate cough and expectoration, or very few or no physical signs in the presence of symptoms. The symptoms, particularly cough and expectoration, are usually more manifest than the signs.

The differential diagnosis of bronchiectasis of extensive degree is not difficult. The essential treatment is posture. As the lesion is usually at the base of the lung, drainage by the inverted position is necessary in order to remove the mucopurulent sputum. Examination in various inverted positions will often determine the best posture for drainage. The experience of the patient may also be used to determine this. The patient is instructed to assume this posture and is advised to vary it as the result in lung drainage is indicated. Lung drainage should be continued for a period sufficient to cleanse the respiratory tract thoroughly. At least fifteen minutes four times a day is a minimum rule. Chronic nasal sinus infections are a frequent complication and usually require attention before postural treatment can be successfully carried out. It may be advisable to place the patient in the country for six months to a year.

Archives of Pediatrics, New York

March, XXXIV, No. 3

18 Nine Cases of Amaurotic Family Idiocy. J. H. McHenry, New York.—p. 161.
19 Suggested Improvement for Out-Patient Work with Children. S. McLean, New York.—p. 173.
20 Case of Tuberculosis Following Ritual Circumcision. M. S. Reuben, New York.—p. 186.
21 History of Pediatrics in New York. A. Jacobi, New York.—p. 191.
22 Diagnosis of Pyloric Stenosis and Pyloric Spasm by Duodenal Catheter. W. W. Howell, Boston.—p. 199.
23 Establishment of Department of Preventive Medicine in Hospital Treating Children. C. V. Dorwarth, Philadelphia.—p. 206.

Archives of Ophthalmology, New Rochelle, N. Y.

March, XLVI, No. 2

24 Case of Hypopituitarism, with Homonymous Hemianopsia (Suprasellar Cyst?), Completely Relieved by Glandular Treatment. C. A. Elsberg and E. F. Krug, New York.—p. 97.
25 Scleral Trephining in Detachment of Retina. J. Green, Jr., St. Louis.—p. 104.
26 Unusual Form of Superficial Corneal Opacity, Probably an Instance of Atypical Epithelial Dystrophy. W. C. Posey, Philadelphia.—p. 113.
27 Glaucoma Simplex without Perceptible Rise in Tension. H. S. Gradle, Chicago.—p. 117.
28 Mesothorium Treatment of Eye Diseases. N. J. Cuperus, Zwolle, Holland.—p. 126.
29 Epithelial New Formation at Corneal Limbus which Recurred for Five Years and was Finally Cured with Mesothorium. Koellner, Wurzburg.—p. 130.
30 Peripupillary Combined Cystotomy. Falchi, Pavia.—p. 135.
31 Case of Pituitary Body Disease and Results of Glandular Administration. G. E. deSchweinitz and H. W. How, Philadelphia.—p. 139.
32 Atrophying Conjunctivitis with Symblepharon. R. Kuemmell, Erlangen.—p. 147.
33 Dyspituitarism with Limitation of Visual Fields; Symptoms Disappearing Under Use of Internal Glandular Therapy, with Return of Visual Fields to Normal. W. Timme, New York.—p. 151.
34 Myopia Cases Coming to Massachusetts Charitable Eye and Ear Infirmary for First Time Between Jan. 1, 1915, and Jan. 1, 1916. H. Gage, Milwaukee, Wis.—p. 154.

Boston Medical and Surgical Journal

March 29, CLXXVI, No. 13

35 Care of Ambulatory Accident Case. H. G. Stetson, Greenfield.—p. 447.
36 Pain in Right Lower Quadrant. W. W. Townsend, Rutland, Vt.—p. 450.
37 Tumors of Spine and Cord; Report of Cases. W. J. Mixter, Boston.—p. 452.
38 *Gastric Ulcer Produced by Intravenous Injection of Staphylococcus Pyogenes. E. C. Steinharter, Cincinnati.—p. 461.
39 Diagnosis and Treatment of Gastric Ulcer. L. Fischbein, Boston.—p. 465.
40 Preparation of Vegetable Proteins for Anaphylactic Tests. R. P. Wodehouse and J. M. D. Olmsted, Boston.—p. 467.
41 Improved Blood Transfusion Tube. W. R. Morrison, Boston.—p. 468.

38. Gastric Ulcer Produced by Injection of Staphylococcus Pyogenes.—The organisms used by Steinharter were obtained

from two sources, namely, the blood of a patient with septicemia and one with an acutely inflamed appendix. The primary cultures in both cases were made in ascites dextrose broth, and yielded the staphylococcus in pure culture. An emulsion of the staphylococcus which was isolated from the appendix produced, on intravenous injection into rabbits, without any preliminary animal passage, stomach or appendiceal lesions in four out of five rabbits injected. On the other hand, the strain of staphylococcus obtained from the case of septicemia was not, when freshly isolated, of the proper grade of virulence to produce gastro-intestinal lesions when injected intravenously into animals, but later, after the organism had undergone preparatory cultivation in the functionating stomach wall of the rabbit, intravenous injection of it was then followed by the formation of gastric ulcer. The ulcers formed were in most cases single. They occurred invariably in the pyloric end of the stomach or duodenum. They varied in size from that of a pinhead to 5 by 7 mm. In some cases they were punched out, clean and well circumscribed, and in other cases, merely necrotic, bleeding areas. In some experiments the ulcer was the sole lesion, while in others it was associated with appendicitis, cholecystitis and arthritis.

Cleveland Medical Journal

February, XVI, No. 2

42 *Significance of Blood Platelets. R. I. Lee and G. R. Minot, Boston.—p. 65.
43 *Two Cases of Congenital Megacolon (Hirschsprung's Disease). C. A. Hamann, Cleveland.—p. 88.
44 *Case of Hodgkin's Disease Involving Stomach. S. P. Reimann, Cleveland.—p. 94.
45 Mechanical Devices in Treatment of Fractures of Long Bones. F. P. Corrigan, Cleveland.—p. 101.
46 Vaccine Treatment of Cerebrospinal Syphilis. O. P. Bigelow, Cleveland.—p.103.
47 Vasomotor Axon Reflexes. J. B. Whelan, Cleveland.—p. 111.

42. **Significance of Blood Platelets.**—Lee and Minot make the deduction that the blood platelets play a very important rôle in initiating coagulation. Apparently blood uncontaminated by tissue juice will not clot as long as the blood platelets are intact. With sufficient alteration in the blood platelets or some portion of them, either from some physical change or from some substance given off by the blood platelets, the phenomenon known as coagulation begins and the development of that phenomenon is associated with further changes in the blood platelets, which then assist in the progress of coagulation. The active principle of coagulation residing in the platelets, while insoluble in salt solution, is soluble in strong saline solution or in distilled water. Such solutions of blood platelets assist in coagulation in the same manner as the blood platelets. Unlike most of the other active coagulating substances, the blood platelets can be subjected to considerable heat (boiling for fifteen minutes) without seriously affecting their activity in promoting coagulation. There are in particular two pathologic conditions which can be attributed to abnormalities of the platelets, namely, purpura hemorrhagic and hemophilia. Since purpura hemorrhagica is intimately associated with a diminution of platelets, and since all of the symptoms are due to platelet deficiency, the rational treatment consists of an attempt to supply the platelet defect. It frequently happens that tissue juice from any source, from fresh raw beef, for example, is of great value when applied locally to a bleeding mucous membrane in this condition. In typical hemophilia there is a hereditary defect in the blood platelets. The defect consists of a slow availability of the platelets for the purposes of coagulation. In hemophilia there are blood platelets in normal or often in slightly increased numbers. Unlike purpura hemorrhagica, in which the blood platelets are normal in their activity but greatly diminished in numbers, the blood platelets in hemophilia are normal in numbers but abnormal in their activity. The direct therapeutic indication in hemophilia is exactly that as in purpura hemorrhagica, namely, the supply of normal platelets. Likewise, locally, tissue juice, may be used with marked benefit.

43. **Congenital Megacolon.**—One of Hamann's patients, a boy of 15 years, had had no fecal evacuation for some two months prior to admission to the hospital. He had attacks of prostration at times, with rapid and feeble pulse. His appetite was fairly good; there was no pain, dyspnea or vomiting. A little over a month after a preliminary colostomy a second operation was done for the purpose of removing the enlarged part of the colon. The artificial anus was first closed, then the abdomen was opened through the former incision. The large intestine was divided at about the middle of the descending colon in which the intestine was about normal in size, and was then pulled out of the pelvis, that is, straightened as much as possible so as to "take up the slack," after which it was divided about 5 inches from the anus; at the lower point of division the bowel was 3 inches in diameter. The ends of the bowel were closed and a lateral anastomosis made on the left side of the rectum. The remaining portion of the large intestine was normal in caliber. Recovery after this operation was uninterrupted. The boy is now quite well and there are régular bowel movements, without the use of cathartics or enemas. The second patient was 2½ years of age. About 10 inches of the large intestine, comprising mainly the sigmoid flexure, were removed, the ends of the bowel closed and a lateral anastomosis made. The child died of peritonitis at the end of a week. In this case a marked enlargement of the bladder was also present.

44. **Hodgkin's Disease Involving Stomach.**—The type of involvement of the stomach in Reimann's case was that of endothelial hyperplasia, fibrosis and lymphocytic infiltration. The mucosa showed a small ulcerated area extending half way down to the muscularis mucosae with irregular steep edges and a small amount of débris on the surface. Fairly well localized to an area about 1 cm. across were seen the endothelial cells and lymphocytes streaming from the submucosa and muscularis, invading between the glands in a dense, closely packed, diffuse manner, compressing and distorting the architecture of the glands. Fibrosis was more evident in the submucosa and muscularis, in which it existed as fine diffuse fibrils and as more closely packed strands. The endothelial cells and lymphocytes replaced muscle bundles and invaded the lymphatic channels, following them very closely. The type of endothelial cell was the same as that of the lymph nodes, and the lymphocytes presented the usual picture. Very few of the giant cells were present and fewer eosinophils. The edges of the infiltration were quite sharp, and with the exception of short prolongations into the lymphatics channels, ended abruptly. On either side a normal stomach wall was seen. A search for bacilli in Gram-Weigert preparations resulted unsatisfactorily; a few broken rods were found which could not be identified as organisms. In spite of definite ulceration there were no symptoms referable to the stomach. The patient is the youngest of the cases of this type on record; he was 14 years of age.

Delaware State Medical Journal, Wilmington

December, 1916, VII, No. 13

48 Abdominal Cesarean Section. W. Wertenbaker, Wilmington.—p. 6.

Florida Medical Association Journal, Jacksonville

March, III, No. 9

49 Osteochondritis Deformans Juvenilis. E. Jelks, Jacksonville.—p. 257.
50 Treatment of Fractures of Humerus and Femur; Use of Autoplastic Graft. H. C. Dozier, Ocala.—p. 259.
51 Intestinal Obstruction; Its Diagnosis and Treatment; Report of Cases. J. A. Simmons, Arcadia.—p. 264.
52 Intestinal Obstruction from Gallstone; Report of Case. R. R. Sullivan, Lakeland.—p. 269.
53 Surgery as a Future. J. S. Helms, Tampa.—p. 270.
54 Senility. W. C. Chowning, New Smyrna.—p. 273.
55 Factors Influencing Death Rate in Surgical and Medical Appendicitis. R. R. Kime, Lakeland.—p. 274.

Georgia Medical Association Journal, Augusta

March, VI, No. 11

56 *Removal of Foreign Bodies from Globe by Electromagnet. F. P. Calhoun, Atlanta.—p. 213.
57 Hygiene in Prophylaxis and Treatment of Eye Diseases. C. Stockard, Atlanta.—p. 219.
58 Treatment of Concomitant Squint. A. B. Mason, Waycross.—p. 223.
59 Vincent's Fusiform Bacillus and Its Pathology. H. M. Lokey and A. W. Gould, Atlanta.—p. 227.

60 Importance of Ocular Examination in Diagnosis of Constitutional Disorders. E. S. Osborne, Savannah.—p. 231.
61 Dysmenorrhea and Its Nasal Relations. W. Lapat, Savannah.—p. 232.
62 Congenital Deaf Mutes Hearing and Conversing Over Long Distance Telephone. M. M. Stapler, Macon.—p. 234.

56. Abstracted in The Journal, May 6, 1916, p. 1491.

Journal of Bacteriology, Baltimore

March, II, No. 2

63 Diphtheroid Group of Organisms; Their Relation to Streptococci. R. R. Mellon, Boston.—p. 81. To be continued.
64 Colorimetric Determination of Hydrogen Ion Concentration and Its Applications in Bacteriology. W. M. Clark and H. A. Lubs, Washington, D. C.—p. 109.
65 Soil Flora Studies. H. J. Conn, Geneva, N. Y.—p. 137.
66 Studies in Nomenclature and Classification of Bacteria. R. E. Buchanan, Ames, Iowa.—p. 155.
67 Evolution and Relationship of Great Groups of Bacteria. I. J. Kligler, New York.—p. 165.
68 Study of Five Members of Septicemia Hemorrhagica; Their Action on Various Carbohydrates. A. M. Besemer, Ithaca, N. Y.—p. 177.
69 Large Numbers of Bact. Abortus Var. Lipolyticus Which May Be Found in Milk. A. C. Evans, Washington, D. C.—p. 185.
70 Creatinin Production by B. Coli and B. Typhi. H. J. Sears, San Francisco.—p. 187.

Journal of Cutaneous Diseases, Boston

March, XXXV, No. 3

71 *Nitrogen Metabolism of Two Cases of Eczema. J. F. Schamberg and G. W. Raiziss, Philadelphia.—p. 135.
72 Histopathology of Hyperidrosis Circumscripta. R. L. Sutton, Kansas City, Mo.—p. 154.
73 Use of Phenol in Dermatology. D. W. Montgomery, San Francisco.—p. 157.
74 Unusual Variety of Vitiligo (Leukoderma Acquisatum Centrifugum). J. B. Shelmire, Dallas, Texas.—p. 163.
75 Case of Lichen Planus Linearis Unilateralis. J. F. Auner, Des Moines, Iowa.—p. 166.
76 Hypertrichosis and Roentgen Ray. G. M. MacKee, New York.—p. 171.

71. Nitrogen Metabolism of Eczema.—Analysis of the results obtained by Schamberg and Raiziss in the metabolic study of two cases of eczema reveals the fact that two different clinical types of disease, which, in the present imperfect state of their knowledge of eczema, are grouped under this heading, exhibit quite a different picture with respect to their nitrogen metabolism. While both cases exhibit a tendency to retain the nitrogen of the ingested food as a result of, or preliminary to, the exfoliation of scales, they differ greatly in regard to the extent of nitrogen retention and its relationship to the protein loss in the scales. In one case the tendency to retain nitrogen is considerably less pronounced than in psoriasis. On a low nitrogen diet the patient was not in a position to maintain even a nitrogenous equilibrium, despite the fact that large amounts of nitrogen were steadily being lost in the exfoliated epithelium. Furthermore, on an ordinary nitrogen diet, the patient was not always able to retain sufficient nitrogen to cover wastage of protein lost in the scales. As a result, the patient lost large amounts of body protein. In psoriasis, on the other hand, during and after the outbreak of the eruption, much of the food nitrogen is retained and the patient remains ultimately in a positive nitrogenous balance. The second case presented a metabolic picture which is like that observed in psoriasis.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

March, XLV, No. 3

77 Pituitary Tumor with General Edema in Two Cases of Nanism (Paltauf and Pituitary Type). W. M. Kraus, New York.—p. 193.
78 Anomaly in Pyramidal Decussation. T. G. Inman, San Francisco.—p. 214.
79 *Some Unusual Features of Jacksonian Epilepsy. S. Leopold and E. M. Auer, Philadelphia.—p. 220.
80 Case of Dementia Praecox Associated with Uncinariasis. E. D. Bondurant, Mobile, Ala.—p. 228.
81 Gold Sol Diagnostic Work in Neurosyphilis (Psychopathic Hospital, Boston). H. C. Solomon and E. E. Southard, Boston.—p. 230.
82 *Heredity in St. Vitus' Dance. C. W. Burr, Philadelphia.—p. 237.

79. Unusual Features of Jacksonian Epilepsy.—The authors cite a number of cases. In one there was an association of diphtheria with jacksonian epilepsy; in another there was association with unilateral sensory phenomena occurring in hydrocephalus; in a third association of thalamic pain, unilateral in character. Unilateral spasm of the face involving chiefly the muscles of the forehead and eyes without involvement of the opposite side has long been considered as a differential diagnostic point between spasm of peripheral and central origin. That such spasm can be of cortical origin is seen in a fourth case in which it is probable that the irritation was not sufficient intensity to cause bilateral involvement. A fifth case showed that general convulsions may appear as local convulsions, owing to the fact that part or the whole of one hemisphere is thrown out of action due to another cerebral lesion, as is seen frequently in the cases of infantile hemiplegia associated with epilepsy where the paralyzed limbs are in a state of spastic contracture and in which the general convulsion makes itself more apparent on the sound side. In a sixth case there occurred jacksonian convulsions from lesions distantly located from the motor cortex. That a jacksonian convulsion may be the initial symptom of a cerebral syphilis was strikingly illustrated in still another case. In another case of cerebral syphilis practically the only symptom present for more than four years was the jacksonian convulsion. The convulsions occurred at irregular intervals during this period. They showed at times the picture of a status epilepticus. There was no progression in the severity or frequency of the attack. The eyegrounds showed a choroiditis. The Wassermann of blood and spinal fluid was negative, but the globulin test was positive and there was a cell count of 20.

82. Heredity in St. Vitus' Dance.—Burr reports three cases of chorea occurring in one family, two of the patients being a niece and son, respectively, of the first patient. The family history disclosed the fact that seven cases had occurred in three generations. Only one of these was in a male, and this patient and his mother furnish the only instance of parent and son both being affected.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

March, IX, No. 6

83 *Effects of Strychnin, Cocain and Quinin on Vas Deferens. J. A. Waddell, Charlottesville, Va.—p. 279.
84 *Pharmacology of Ureter. Action of Hydrastin, Hydrastinin, Cotarnin, Emetin and Some Pyridin Derivatives; Further Aanalysis of Opium Action. D. I. Macht, Baltimore.—p. 287.
85 Device for Overcoming Clotting During Direct Blood Pressure Experiments. W. H. MacCraken and I. Werness, Detroit.—p. 305.
86 *Endermic Reactions. T. Sollmann and J. D. Pilcher, Cleveland.—p. 309.

83. Effects of Strychnin on Vas Deferens.—This paper deals with the effects of these drugs on the excised vas deferens and is, therefore, a study of the peripheral action of these agents. Strychnin in concentrations of from 1:30,000 to 1:6,000, produced rhythmic contractions and increased the tone in the quiescent organ, and increased the rate, amplitude, and tone in the rhythmically active. Cocain produced an increase in the rate, tone and amplitude of the rhythmically active organ, and a rise in tone and rhythmic activity were excited in the quiescent. The change in tone preceded that in rhythmicity. After very large doses, a rigor-like effect was observed. Quinin in concentrations of from 1:30,000 to 1:10,000, on the quiescent organ produced rhythmic contractions and in some cases moderately raised the tone; while on the rhythmically active it increased the rate, producing an intermittent, rhythmical condition in which periods of rapid movement with elevated tone alternated with ones of quiescence. The latent period was longer than after strychnin, and the effect of the drug was quickly abolished by placing fresh fluid in the bath. Sustained effect on tone was not observed.

84. Pharmacology of Ureter.—According to Macht, hydrastin and emetin exert a papaverin-like action on the ureter, inhibiting its contractions and relaxing its tonus. Hydrastinin and cotarnin exert a morphin-like action on the ureter, stimulating its contractions and increasing its tonus. Piperidin hydro-

chlorid and arecolin and coniin produce a stimulation of the ureteral contractions and an increase in its tonus. These observations with a large number of experiments on opium alkaloids lead Macht to a general hypothesis that the inhibitory action of the papaverin group of opium alkaloids on the ureter is due to their benzyl constituent, and that the stimulating action of the morphin group is due to their piperidin constituent.

86. **Endermic Reactions.**—In planning a study of the effects of iodism on the response to irritants Sollmann and Pilcher had recourse, among other measures, to the application of drugs to the scarified skin. Peculiar and striking reactions were produced. Sixty-two agents, including distilled water, were used. Summarizing the results noted it may be said that the application of drugs to the scarified or punctured skin produces local reactions, belonging to several distinct types. The most important of these are: urticarial wheals, vascular changes, smarting or pain. Only a few substances produce urticaria. The most typical are; histamin, peptone, morphin and its esters, atropin, calcium chlorid, urea and formaldehyd. A comparison of the substances that do and do not produce urticaria shows that this is not related to vasoconstriction or vasodilatation, or capillary paralysis, or to acidosis, or to various forms of inflammatory or sensory irritation, or to osmosis. In fact, it does not appear connected with any known chemical or pharmacologic relations; but is presumably due to a specific increase of the permeability of the capillaries. Certain of the substances that produce local urticaria are also known to be effective systemically. However, many substances that may produce cutaneous reactions on systemic administration fail to do so on local application. With these, the systemic reactions are probably indirect. Blanching is produced by certain vasoconstrictor agents (epinephrin, pituitary, hydrastin), but fails with others that act peripherally (barium, tyramin, etc.). Nitrites do not cause vasodilatation. Several distinct groups of sensory actions are distinguishable, such as the itching of the urticarial agents, the smarting and burning of the simple irritants; the formication of aconite, and the lancinating pain of veratrin.

Medical Record, New York

March 31, XCI, No. 13

87 Management of Chronic Dyspeptic. C. S. Fischer, New York.—p. 529.
88 Susceptibility to Furuncle. D. W. Montgomery and G. D. Culver, San Francisco.—p. 533.
89 Trichinosis Complicated by Encephalitis. L. Bloch and G. B. Hassin, Chicago.—p. 537.
90 Neuritis and Perineuritis with Reference to Newer Methods of Treatment. W. Martin, Atlantic City, N. J.—p. 540.
91 Case of Persistent Priapism. A. L. Wolbarst, New York.—p. 542.
92 War Surgery in Carpathians. B. F. Morowitz, New York.—p. 543.

Military Surgeon, Washington, D. C.

April, XL, No. 4

93 Sir Thomas Lauder Brunton (1844-1916); An Apostle of Preparedness. F. H. Garrison.—p. 369.
94 *Mental and Physical Activity with Reference to Nutrition and Blood Pressure. R. G. Heiner.—p. 378.
95 Civil Physicians and National Defense. H. Page.—p. 386.
96 Military Dogs. E. C. Jones.—p. 395.
97 Present Status of Artificially Treated Drinking Water in Field. W. Lyster.—p. 401.
98 Physical Examination of Large Bodies of Men. C. Willcox.—p. 411.
99 Occurrence of Endamebic Dysentery in Troops Serving in El Paso District from July, 1916, to December, 1916. C. F. Craig.—p. 423.

94. **Mental and Physical Activity and Blood Pressure.**—The facts brought out by Heiner are: (1) that exercise after meals raises the blood pressure and that activity, either mental or physical, after eating with the warding off of any inclination to sleep soon after meals, if continued over a period of several days will heighten the blood pressure considerably. This heightened blood pressure compensates for the need of extra circulation in order to supply the brain, muscles and digestive tract all at the same time. When the blood pressure is raised by this method of living the missing of a meal or sleeping after a meal will cause a fall in blood pressure, and, in the case in which sleeping after a meal occurs, there will be a lack of blood for the digestive organs and consequent failure in digestion with disagreeable symptoms on awakening; (2) when the heart, kidneys and digestive organs are sound, but some part of the body, as the lungs, is being destroyed by a chronic infection, as tuberculosis, which an increase of circulation will benefit, forced feeding carried out by exercise or stimulation after meals will give better results than forced feeding given without regard to time of exercise or stimulants; (3) living without food for a few days is not as unpleasant an experience as one would be led to believe by the symptoms of faintness and intense hunger which come on during the first few hours; for these not only pass away entirely, but there is a feeling of well being and desire to be active, and at the beginning of the second period of starvation there will be little if any of the disagreeable symptoms experienced at the start of the first period. During the starvation period practically everything is digested and absorbed from the alimentary tract and the digestive organs come to rest. During the rest and feeding period all the energies of the system are used in the process of digestion, and there will be very little of the food left undigested to putrefy and cause autointoxication.

New Orleans Medical and Surgical Journal

April, LXIX, No. 10

100 Uncinariasis Investigation in Antimony Mines, Sinhwa, Hunan Province, China. W. S. Chow, China.—p. 672.
101 Treatment of Burns with Paraffin Mixtures. R. Matas, New Orleans.—p. 677.
102 Gastro-Enterology for General Practitioner. A. L. Levin, New Orleans.—p. 688.
103 Eighteen Months' Observation on Mental and Physical State of Children Following Removal of Tonsils and Adenoids. C. J. Bloom, New Orleans.—p. 695.
104 Early Case of Leprosy. P. L. Querens, Preston, Cuba.—p. 706.
105 *Appendectomy via Inguinal Canal. J. T. Nix, Jr., New Orleans.—p. 709.

105. **Appendectomy via Inguinal Canal.**—Nix claims that while in the cadaver, the appendix is nearest McBurney's point, in life the healthy appendix is always external and below, and in appendicitis, the vermiform process lies near the internal abdominal ring. Therefore he removes the appendix via the inguinal canal. Briefly, the technic is as follows: Make an incision ½ to 1 inch in length over the inguinal canal, the lower end being about 1 inch from the right pubic spine. Separate the fibers of the external oblique, but leave the ring intact. Retract the divided aponeurosis. The strong fibers of the conjoined tendon are separated as in the gridiron technic. Retracting the divided tendon exposes a little pad of fat which protects the internal abdominal ring and separates the peritoneum at this point from the abdominal wall. By retracting upward with a small curved forceps the peritoneum is caught and divided with scissors, thereby opening the abdominal cavity. The lower border of the proximal colon can be seen through the incision. With very little difficulty the base of the vermiform process is reached and the appendix delivered into the opening. If it is retrocecal and adherent, delivery is impossible, and the retrograde subperitoneal enucleation can be easily performed. A single suture closes the incision. The operation is done under local anesthesia. Fifty-one patients have been operated on by Nix by this technic during the past year.

New York Medical Journal

March 31, CV, No. 13

106 Stuttering Relieved by Reversal of Manual Dexterity. J. H. Claiborne, New York.—p. 577.
107 Treatment of Abortion. G. L. Brodhead, New York.—p. 581.
108 Frequency and Significance of Dysfunction of Internal Secretory System in Feebleminded. C. P. McCord, Detroit, and H. A. Haynes, Lapeer, Mich.—p. 583.
109 Incompetency of Ileocecal Valve, Complication of Gastric Ulcer. L. G. Cole and J. P. Hoguet, New York.—p. 588.
110 Clinical Employment of Porcelain Filter. W. J. McGurn, Boston. p. 590.
111 Blood Pressure in Clinical Medicine. M. Schulman, New York.—p. 592.
112 Ear and General Practitioner. L. Fisher and I. H. Jones, Philadelphia.—p. 597.
113 Abdominal Cesarean Section for Toxemia of Pregnancy. T. H. Cherry, New York.—p. 600.
114 Impotence. B. P. Thom, New York.—p. 601.

Public Health Journal Toronto

March, VIII, No. 3

115 Value of Milk Depots. J. Tessier, Quebec.—p. 63.
116 Meningococcus Meningitis. J. G. Fitzgerald, Toronto.—p. 67.
117 Modern Conceptions of Fumigation After Communicable Diseases. F. Adams, Toronto.—p. 74.
118 Economic Value of Preventive Medicine. J. O. McCarthy, Toronto.—p. 78.

Psychiatric Bulletin, Utica, N. Y.

January, II, N. S., No. 1

119 Experimental Pathology of Central Nervous System Studied with Vital Azo Dyes. J. T. MacCurdy, New York.—p. 1.
120 *Clinical Studies in Epilepsy. L. P. Clark, New York.—p. 21.

120. **Studies in Epilepsy.**—The results of Clark's clinical study of essential epilepsy are briefly as follows: There exists a more or less definite type of constitutional makeup in epileptics. The essential defects of instincts are egocentricity, supersensitiveness, an emotional poverty, and an inherent defect of adaptability to normal social life in its broadest significance. The main defect is an inheritable one. This makeup is the primary or original mental endowment of the potentially epileptic individual. It is accentuated and made the more obvious by the further advance of the disease only when seizures develop. It is then often spoken of as the "mental stigma" of the disease. The attacks are not solely responsible for epileptic deterioration, but the seizures are themselves symptoms and exhibitions of the deteriorating disorders. The seizures do not always indicate the progress and degree of deterioration in any given case; that is, the number and severity of fits in a given case may not be an index to the amount of deterioration, nor may one postulate the severity of seizure reaction in a particular case by the type of deterioration.

The precipitating mental factors that often seem to bring about epileptic reactions in a potential epileptic are types of stress and annoyance, causing a loss of spontaneous interest, and an intensive regression to day-dreaming, lethargies and somnolence. The attack occurs at the final break of a too severe tension, and psychologically may be viewed as an intense reaction away from the intolerable irritation, a regression to a primitive mentality comparable to that of infancy or intra-uterine life. The therapeutic suggestions for a mental therapy in essential epilepsy would be to overcome, by proper training and education, the earliest beginnings of epileptic reactions in childhood. More particularly should the training concern itself with the eradication, so far as possible, of the defective instincts shown in egocentricity, supersensitiveness and rigidity of adaptation to the home and community. Even though many epileptics may be quite deteriorated, it is still often possible to train back their once discarded mental interest and thus restore much of their emotional and mental dilapidation. A series of arrested cases of frankly pronounced epilepsies are cited to show the mental mechanism by which arrests have been brought about

South Carolina Medical Association Journal, Greenville

March, XIII, No. 3

121 Venereal Prophylaxis. M. H. Wyman, Columbia.—p. 488.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

March, XXV, No. 3

122 Fractures of Long Bones. F. H. Clark, El Reno.—p. 65.
123 New Sterilization Operation on Female Tubes. A. L. Blesh, Oklahoma City.—p. 73.
124 Transverse Incision in Appendix Operations. H. L. Charles, Atchison, Kan.—p. 74.
125 Hemorrhoidectomy. J. M. Cooper, Oklahoma City.—p. 79.
126 Excessive Absorption of Fat of Orbit After Enucleation of Eye; Its Cause and Prevention. J. H. Thompson, Kansas City, Mo.—p. 81.
127 When to Operate in Disease of Biliary Tract. J. G. Sheldon, Kansas City, Mo.—p. 84.
128 Malignant Growths of Face. D. W. Goldstein, Fort Smith, Ark.—p. 85.

Vermont Medicine, Rutland

March, II, No. 3

129 Sinuses and Fistulae: Importance of Their Careful Exploration and Resultant Discoveries. G. R. Anderson, Brattleboro.—p. 57.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 10, I, No. 2932

1 *Treatment of Gunshot Wounds of Abdomen. A. L. Lockwood, C. M. Kennedy, R. B. Macfie and S. F. A. Charles.—p. 317.
2 *Three Hundred Gunshot Wounds of Abdomen. J. Fraser and H. Drummond.—p. 321.
3 Abdominal Injuries in Casualty Clearing Station. A. Don.—p. 330.
4 Indian Operation of Couching for Cataract. R. H. Elliot.—p. 334.

1. **Treatment of Gunshot Wounds of Abdomen.**—The conclusions drawn by the authors from observation of 356 cases with operation and 144 not operated on are that wounds of the large vessels to the liver, kidney and spleen are fatal before they can come to operation. Wounds involving the pancreas are seldom seen on the operating table, by reason, perhaps, of the contiguity of the organ to large vessels; only one case was seen by the authors. In that a foreign body was lodged in the tail of the pancreas. Anteroposterior wounds, especially in the epigastrium, are least dangerous, and wounds from side to side, especially low down, are dangerous. Wounds of solid viscera are not so dangerous as those of hollow viscera. Patients who come to operation with a herniated loop of bowel exposed do badly, especially if much bowel is lying exposed; the same is true when the stomach is partially herniated. Wounds of the stomach, colon, and especially the small intestine, require exploration, but in posterior wounds involving the colon the greatest care should be taken not to convert a retroperitoneal condition into an intraperitoneal one. Wounds of the liver and kidney should be determined as such only, and then treated expectantly, doing no more than exploring and cleaning up the track, and not that if probably a through and through wound produced by an undistorted rifle bullet or shrapnel ball. Avoid resection. End-to-end anastomosis is preferable to lateral when resection is essential. Wounds of the diaphragm are not necessarily fatal, nor even to be greatly feared. Careful repair gives excellent results. Multiple drainage tubes are rarely necessary, and always to be avoided if possible. Abdominal lavage is a dangerous practice. Never leave free, unprotected gauze in the abdomen. Paul's tube should be relegated to the museum, except in very rare cases. Speed in operating is essential, not only for the benefit of the patient, but because of the demands of scores of less vitally wounded men requiring attention during an active offensive. Resection for fecal fistula is better done late. The results quoted in this article are proof that abdominal surgery is at least as profitable in a military sense as the surgery of compound fractures of the femur, skull, etc.; the patients who recover make a rapid and complete recovery and become a satisfactory military asset sooner than the men who have been disabled by compound fractures of the skull, etc.

2. **Id.**—The authors are convinced that, in the the vast majority of cases of penetrating wounds of the abdomen, operative measures offer the best chance of success. They qualify the statement by excluding from the category uncomplicated wounds of the liver and certain wounds of the kidney and spleen. When the wound affects the hollow viscera of the abdomen it is only as the rarest exception that a spontaneous recovery occurs. When these patients arrive in the hospital they are almost universally in a state of intense collapse. The authors have therefore found it advisable to wait for a period of from one to two hours, until the increased shock of the journey has subsided. To this rule they make one exception, those cases which show evidences of rapid or progressive hemorrhage; in such cases the risks attendant on immediate operation are undertaken. Occasionally these patients arrive in the hospital having been very heavily dosed with morphin, which greatly militates against their eventual recovery; very rarely should the amount of half a grain be exceeded. During the operation every precaution is taken to minimize the degree of shock. Immediately before the operation commences the administration of subcutaneous saline is begun, and it is continued throughout the operation:

3 to 4 pints of fluid are frequently given in this way. They have employed closed ether anesthesia and have also made great use of the method of warmed ether administration, using the apparatus supplied by Mayer and Meltzer. During the past four months the authors have had considerable opportunity for using ether intratracheal anesthesia. In surgery of the upper abdomen they have found it very pleasant to work with, but do not favor it as a general routine in abdominal surgery. There is a type of case which is, they believe, suitable for intravenous ether anesthesia, namely, patients who are obviously very collapsed, and yet who demand urgent operation.

Edinburgh Medical Journal

March, XVIII, No. 3

5 Grafting or Transplantation of Tissues. A. Thomson.—p. 169.
6 *Incidence of Bovine Infection of Tuberculosis in Children. C. Y. Wang.—p. 178.
7 Pathology of So-Called Sprains of Ankle. E. F. Cyriax.—p. 196.
8 Acute Intestinal Obstruction. A. Miles.—p. 200.
9 Case of Violent Screaming and Photophobia Caused by Dentition. J. Thomson.—p. 203.
10 Two Cases of Congenital Symmetrical Perforation of Parietal Bones. D. M. Greig.—p. 205.

6. **Bovine Infection of Tuberculosis in Children.**—A bacteriologic investigation into 281 cases of various clinical forms of tuberculosis in Edinburgh conducted by various workers has resulted in the isolation of the bovine tubercle bacilli in 80 out of 102 patients (78.4 per cent.) under the age of 5 years; in 45 out of 64 patients (70.3 per cent.) between 5 and 16 years, and in 9 out of 115 patients (7.8 per cent.) above 16 years. Abdominal tuberculosis and tuberculous meningitis together are responsible for about 90 per cent. of the summed mortality from tuberculosis in children under 1 year, and about 75 per cent. in children between 1 and 5 years. The material from 9 children dead from these two diseases was examined bacteriologically, and from 6 the bovine type of tubercle bacillus was isolated. A large percentage of children in Edinburgh are fed wholly or partly on cow's milk, and in a great number of instances the milk is consumed raw. These two incidents, together with the high percentage of tuberculous cow's milk, give an explanation of the prevalence of abdominal tuberculosis in Edinburgh, and, further would account for the infection in the six cases of abdominal tuberculosis and tuberculous meningitis from which bovine tubercle bacilli were obtained. Children who were bottle fed on raw cow's milk, and also those fed on boiled cow's milk, were tested with tuberculin; it was found that 37.5 per cent. of the first group reacted, as against 15.4 per cent. of the second group. If the reaction be accepted as an indication of the presence of an infection in the body, the result, in a measure, affords corroboration of the bacteriologic findings.

Journal of Tropical Medicine and Hygiene, London

March 1, XX, No. 5

11 Prophylaxis in Bilharziasis. F. G. Cawston.—p. 49.

Lancet, London

March 10, I, No. 4880

12 Indian Operation of Couching for Cataract. R. H. Elliot.—p. 361.
13 Agglutination Curve and Its Importance in Diagnosis of Typhoid and Paratyphoid in Inoculated Persons. G. Dreyer and A. C. Inman.—p. 365.
14 *Simple Ulcer of Esophagus. J. B. Christopherson.—p. 369.
15 Chronic Empyema; Value of Decortication of Lung. W. H. Battle.—p. 371.
16 Repair of Large Bony Defects in Skull by Means of Metal Plate. C. Noon.—p. 373.
17 Case of Acute Osteomyelitis of Spine. L. P. Gould.—p. 374.
18 Closure of Colotomy Openings Performed for Wounds of Rectum. P. Lockhart-Mummery.—p. 376.
19 Use of Bismuth Iodoform Paraffin Paste Following Operation of Bone Grafting. H. S. Brander.—p. 377.
20 Suturing of Fractured Bones by Absorbable Ligatures. K. H. Digby.—p. 378.
21 Use of Phylacogen in Puerperal Sepsis. J. H. Reynolds.—p. 378.

14. **Fatal Hemorrhage in Ulcer of Esophagus.**—A case of fatal hematemesis is reported by Christopherson in a man aged 36, which occurred in July, 1916, at Khartoum, and it was due to an ulcer of the esophagus perforating the descending part of the arch of the aorta. The patient consulted a medical man because he had, he thought, something in the throat, and, as he had first noticed it after dinner on the previous evening when he had partaken of a dish of soft fish, he thought that he might have a fish-bone lodging in his throat. There being no clinical evidence of fish-bone or foreign body, he was put to bed and given expectant treatment. His symptoms were as follows: He felt as if there was "something in the chest"; he felt it when he swallowed, more especially when he swallowed "nothing" and also when he drew a deep breath. He located this sensation, which was more discomfort than pain, inside the chest behind the sternum, at a place which would correspond to the level where the ulcer was eventually found. He also had some pain behind, between the shoulder blades. There was nothing to be seen in the throat, no physical signs of anything amiss in the chest, and, in fact, the only symptoms indicating that there was anything wrong were a rise of temperature to 100 F., a coated tongue, and discomfort, sometimes amounting to a little pain, on swallowing or drawing a deep breath. Seven days later he had a large hemorrhage and one day after this the fatal hemorrhage occurred. At the necropsy it was found that the hemorrhage came from an esophageal ulcer which had become adherent to the descending part of the arch of the aorta, in the neighborhood of the bifurcation of the trachea and which had penetrated the arterial wall. There were two other ulcers in the esophagus, both situated at the cardiac end just within the esophagus, one of which had healed with a cicatrix, and the other, a larger oval one, in the process of healing.

Medical Journal of Australia, Sydney

February 17, I, No. 7

22 *Case of Friedreich's Disease. W. F. Litchfield, O. Latham and A. W. Campbell.—p. 135.
23 Cirrhosis of Hemochromatosis or Bronzed Diabetes. J. C. Verco.—p. 140.

February 24, No. 8

24 Hints on Life Assurance. J. C. Verco.—p. 155.
25 Simple Inhaler. L. W. Bickle.—p. 159.
26 Ulceromembranous Stomatitis. H. S. Marsh.—p. 160.

22. **Friedreich's Disease.**—The microscopic examination of the brain and spinal cord in this case showed a relatively old sclerosis affecting parts of the posterior tracts, in which the interstitial tissue had assumed an unusual type, resembling that found in disseminated sclerosis. An irregular but less marked sclerosis, of considerable duration, was also present in the lateral regions of the cord. This sclerosis involved areas which do not correspond to sharply defined tracts, and was associated with a much more recent degeneration, revealed by Marchi's method of staining. These changes could be traced beyond the medulla, and there were faint indications of them in the cerebrum. There were no marked changes in the pia-arachnoid, blood vessels or lymph glands of the cord or brain. Moreover, there was a normal condition of the nerve cells, save a few in Clarke's column and the large cells in the postcentral gyrus, as well as a few in the posterior spinal ganglia. A gross atrophy of the cerebellum was not found and the dentate nuclei, the olives and red nuclei were quite normal. The changes described bear a certain pathologic resemblance to Gower's ataxic paraplegia, especially in the escape of the posterior root zones and ventral fields.

Archives des Maladies du Cœur, etc., Paris

February, X, No. 2, pp. 49-96

27 *Variations in the Heart Rhythm and Arterial Blood Pressure with Change of Position, Effort and Fatigue, Considered from Standpoint of Aptitude for Military Service. C. Laubry and P. Lidy.—p. 49.
28 *Effects on the Heart Rhythm of Severing the Cervical Spinal Cord. (Effets de la section de la moelle cervicale sur le rythme cardiaque.) M. Petzetakis.—p. 66.
29 *Action of Periarterial Sympathectomy on the Peripheral Circulation. R. Leriche and J. Heitz.—p. 79.

27. **Test Variations in Heart Rhythm and Blood Pressure.**—Laubry and Lidy state that examining men for fitness for military duty is throwing light on the reserve powers of the heart. They relate here the results of numerous tests, first

describing the findings in twenty young soldiers with apparently sound cardiovascular apparatus. They compare them with those from numbers of young men with various heart and vascular affections or during extreme fatigue or during exercise and after changes of position. Curves are given for better comparison. Among the conclusions drawn is that the test variations in rhythm in the normal are within such a wide range that an increase or decrease in the heart beat or the lack of any change or even a delay of three or four minutes before return to the previous condition cannot be regarded as indicating pathologic conditions under change from the erect to the reclining position or vice versa, and running 100 meters with the gymnasium step, followed by reclining. But pathologic conditions may be surmised if the delay before return to the normal rhythm is longer than three or four minutes. At the same time they are unable to say whether the abnormal findings are due to the weakness of the heart itself or to nervous influences. If the same findings are obtained on repetition of the test at considerable intervals, the decision is against the man's being fit for active service. No diagnostic deductions could be drawn from the tests of the blood pressure; the responses were practically the same in the healthy and in those with known heart disease. The blood pressure was examined at the same time as the heart rhythm and again after the man had flexed the trunk on the pelvis twenty times. They add that this negative conclusion is not surprising when we take into consideration the multiplicity of factors, mechanical, nervous, cardiac and vasomotor which cooperate in influencing the blood pressure. The sphygmomanometer findings may prove misleading unless supplemented by watching over the case and general condition, as a man with hyperthyroidism or polycythemia might give a normal response at a single sphygmomanometer reading.

28. **Influence on Heart Rhythm of Severing the Cervical Spinal Cord.**—Petzetakis reports experiences on dogs which show that severing the cervical spinal cord is followed by symptoms of dissociation of auricle and ventricle functioning, fibrillation and slowing of the heart rhythm. The balance between the accelerator and moderator nerves is upset and the latter assume predominating influence.

29. **Peripheral or Periarterial Sympathectomy.**—Leriche and Heitz apply this term to Jaboulay's method of denuding a segment of the large arteries by tearing away from them the network of sympathetic fibers which enlace them in a continuous sheath. He found this a successful means of influencing mal perforans of the foot (denudation of the femoral artery), and influencing certain neuralgias in the viscera (denudation of the celiac artery). Leriche announced in 1913 that a better effect was obtained by severing the sympathetic fibers, resecting the perivascular sheath over a certain stretch of the artery. Last year they found this measure successful in curing at once and permanently causalgia in the median nerve following a war wound in two cases. For this he resected the sheath of the brachial artery. Encouraged by this success they have been applying this same measure in treatment of paretic and spastic disturbances in the limbs of the reflex type, that is characterized by vasomotor and thermic disturbances, but without the reaction of degeneration. The details of nine cases are tabulated. In one there was intense pain in the median nerve, in the others there was paralysis or contracture of the arm or leg. The technic was the same in each case; the sheath clinging tightly to the artery was separated from it over a stretch of 6 or 9 cm. It is difficult to resect this sheath without tearing it into fragments, and the same points have to be gone over several times to be sure that the lower layers of the nerve network have been removed. The artery contracts to a small cord, but by the next day a vasodilating reaction follows. The temperature of the limb below may run up by 2 degrees C., but the central temperature does not alter. The blood pressure also rises. By the end of two weeks these symptoms have subsided, as a rule, and the artery has resumed its normal aspect. This was ascertained at a later operation on the limb in two cases. Clinical and experimental data harmonize as to the effect produced. They explain it as the result of the subsidence of the resistance hitherto maintained to the passage of the blood stream. The heart impulse is propagated to the periphery entire, until, after days or weeks, vascular tone is regained. See Abstr. 46.

Journal de Médecine de Bordeaux

March, LXXXVIII, No. 3, pp. 41-50

30 The Principles of Prophylaxis of Tuberculosis. X. Arnozan.—p. 43.

31 *The Antituberculosis Institutions in the Gironde Province before the War and at Present. (Les institutions antituberculeuses avant la guerre.) X. Arnozan.—p. 44; (Les œuvres militaires et les projets civils depuis la guerre.) X. Arnozan.—p. 53.

32 *The Tuberculous in the Hospitals. Leuret.—p. 55.

31, 32. **What Is Being Done in Southwestern France to Combat Tuberculosis.**—This entire number is devoted to descriptions of the various sanatoriums and organizations in the Gironde department, aiming to arrest the spread of tuberculosis. Arnozan remarks that among the thousand other problems brought by the war and pressing for solution, the question of what to do with the tuberculous soldiers soon became one of the most important. All provisions made for isolating and caring for them soon proved inadequate for the throngs flocking to them for a three months' course of treatment and training. Tuberculous soldiers are so numerous, at present, he says, especially in the cities, that their participation in social life is indispensable. To isolate them all suddenly would be to dry up an important source of the economic life of the country. Leuret reiterates that outside of the acute phases of this disease, the earning capacity of the tuberculous merchant, workman or farmhand may not suffer materially for years and years. But if the tuberculous soldiers return to indoor and factory occupations, their doom is sealed, while outdoor occupations might result in a clinical cure. Many tuberculous soldiers long to take up farm life, but they have no means nor training for this. Leuret proposes that the state should make it possible for them to return to the land. It would be cheaper in the long run, he insists, than merely palliative measures, such as sanatoriums and hospitals. A central office should be organized to study all the outdoor occupations open to the valid tuberculous, and also an employment bureau to place the men as farmhands, woodsmen, charcoal burners, surveyors, etc. But, better than all, is the plan to set up each tuberculous soldier on a small farm. A colony of such farms at a very low rental would solve the problems of restoring health, self-support and companionship. The house should be planned on the sanatorium model, with separate sleeping room for the tuberculous member of the family. Charitable societies have an ample field here. By this means the country would get the benefit of the strength still left in its tuberculous soldiers and their lives would be lengthened. Left to themselves, they will be apt to drift into crowded factories and sleep in close crowded rooms, sealing their own doom and infecting others.

Presse Médicale, Paris

February 8, XXV, No. 9, pp. 81-88

33 *Amebic Dysentery in France. (L'amibiase chronique en France à la fin de l'année 1916). P. Ravaut.—p. 81.

34 *Thumb Sign of Ulnar and Median Paralysis. (La préhension du pouce dans les paralysies du cubital et du médian.) P. Descoust.—p. 83.

35 The Throbbing in a Felon. (La sensation du doigt qui bat dans le panaris.) A. Gambier.—p. 84.

February 15, No. 10, pp. 89-96

36 *Biliary Fistulas. How to Avoid and How to Treat Them. V. Pauchet.—p. 89.

37 *Intraspinal Injection of Insoluble Calcium and Mercury Salts. A. Carniol (Bucharest).—p. 91.

33. **Chronic Amebic Disease in France.**—Ravaut remarks that the ameba is being found in the stools of an astonishingly large number of men who have chronic bowel trouble. In many cases there does not seem to have been an acute phase of dysentery; the insidious chronic type gradually became installed. The case charts of the men record merely gastro-enteritis with anemia, diarrhea with general weakness or the like. No one seems to have suspected dysentery in the first onset of trouble. The ameba parasites were evidently imported by troops from Africa early in the war, and months elapsed before there was an actual epidemic from them. In the majority of cases the disease starts in the rectum and

colon as usual, but the general symptoms and the frequency of metastasis in the liver render it more a general disease than dysentery. Among the types encountered are those with rheumatic pains and sciatica. In all, the weakness and anemia and recurring bowel disturbance keep up indefinitely, with occasional intermissions, unless the ameba is attacked with emetin and the general condition strengthened with arsenic. He urges that the men with chronic bowel trouble should be segregated in some special hospital. At present they are scattered through the hospitals or have been sent home. The amebiasis being unrecognized and hence untreated, keeps the man a chronic invalid.

34. **Thumb Sign in Ulnar and Median Paralysis.**—Descoust gives three illustrations of the abnormal position of the thumb in holding with both thumbs a sheet of paper when there is paralysis of the ulnar or median nerve or both.

36. **How to Obviate and How to Treat Biliary Fistula.**—Pauchet gives eight illustrations showing the technic advocated by Bevan, Judd and Mayo, and his own method by which accidental injury of the bile passages is avoided. He also discusses how to treat a fistula if one develops.

37. **Intraspinal Injection of Insoluble Substances.**—Carniol remarks that while the intraspinal technic has given good results in the line of anesthesia, as a therapeutic method it has proved disappointing. He thinks this is due to the drug being absorbed too rapidly low down in the intraspinal canal, and he has been experimenting with dogs to learn the fate of comparatively insoluble substances injected into the spinal canal. Dogs bore without apparent disturbance intraspinal injection of massive doses of different comparatively insoluble substances, so that he was encouraged to try the method in the clinic. He treated some epileptics with intraspinal injection of from 30 to 70 cg. of calcium carbonate suspended in 1 c.c. of distilled water or olive oil. There was headache afterward, sometimes intense, and slight backache at the point of injection, but there was no disturbance of the motor functioning, reflexes or sphincters. The patients had been having from two to five seizures a day, but after the injection they had no more for five or eight days and then they recurred less frequently than before. The subsidence of the seizures shows that the drug finally reaches the brain. No benefit from the injections was apparent in four women with chronic mania. He also tried mercury salicylate in some syphilitics by this technic. After injection of from 3 to 7 mg. the reaction was negligible, but the cases are too recent to estimate the therapeutic outcome.

Progrès Médical, Paris

February 17, XXXII, No. 7, pp. 53-60

38 *Remote Results of Skull Wounds. (Le pouls, la tension artérielle et le réflexe oculo-cardiaque dans les suites éloignées des traumatismes craniens.) R. Oppenheim.—p. 53.
39 Nodular Erythema with Inherited Syphilis. A. Vahram.—p. 55.
40 Sadism. (Les allemands et le marquis de Sade.) P. Voivenel.—p. 58.

38. **Remote Results of Wounds of the Skull.**—Oppenheim tabulates the findings as to the pulse, blood pressure and the oculocardiac reflex in forty-seven men who some months or a year or more before had suffered from concussion of the brain; also in eighty-seven whose skull wounds had required trephining. No regularity or constancy in the modifications in these lines could be detected, and series of symptoms indicating vagotony or sympathicotony were rare. At the same time, discovery of an abolished or reversed oculocardiac reflex and of acceleration or retardation of the pulse may afford a valuable basis for estimation of the subjective disturbances of which the wounded may complain.

Revue Médicale de la Suisse Romande, Geneva

January-February, XXXVII, No. 1-2, pp. 5-92

41 Treatment of Diffuse Peritonitis by the Fowler-Murphy Method. C. M. Du Pan and R. Martin.—p. 5.
42 *Tubercle Bacilli in the Urine. (De la bacillurie chez les tuberculeux.) G. Humbert.—p. 35.
43 *Comparative Gravity of Location of Tuberculous Processes in Left or Right Lung. Tecon and Aimard.—p. 45.
44 Physiotherapy at Paris for the Wounded. F. M. Messerli.—p. 49.
45 *Functional Symptoms in Certain Cases of Femoral Hernia and their Relation to Pulmonary Tuberculosis. J. A. Veyrassat.—p. 56.
46 *Periarterial Sympathectomy in Treatment of Mal Perforans. (Du traitement du mal perforant plantaire par la dénudation de l'artère fémorale dans le triangle de Scarpa.) J. A. Veyrassat and A. Schlesinger.—p. 63.
47 Chronic Frontal Sinusitis. A. Pugnat.—p. 68.
48 Fetal Hiccup. (De singultu foetale.) R. Chapuis.—p. 70.

42. **Tubercle Bacilli in the Urine Without Lesions in the Urogenital Apparatus.**—Humbert examined the twenty-four hours' urine, to be sure to avoid erroneous conclusions from too small amounts. He allowed the sediment to settle for twelve hours, using a conical vessel, then decanted and centrifugated the 100 or 150 c.c. at the bottom of the vessel, repeating until he had the whole concentrated into a single tube. The sediment then was separated into two parts. One part was spread on four microscopic slides; the other part was used to inoculate guinea-pigs in case of positive microscopic findings. He thus examined the urine of thirty-eight patients with meningeal or pulmonary tuberculosis and no clinical signs of renal localization, and in a later series forty-seven with pulmonary tuberculosis. In the total forty-three cases of pulmonary tuberculosis, bacilluria was found in only seven, that is, in 16 per cent. Examination with the microscope is not conclusive; only inoculation of animals gives absolutely reliable findings. Hence examination of the urine is of little aid in the diagnosis, as the course of the case confirms the differentiation before the response from inoculation can be obtained. At the same time, the research reported confirms that tubercle bacilli may be found in the urine when the kidneys seem to be entirely intact, even at necropsy. Such cases are rare, but they corroborate the dictum that bacteriologic examination of the urine alone does not permit the diagnosis of renal tuberculosis.

43. **Comparative Gravity of Lesions in Right or Left Lung.**—This communication from Leysin is based on examination of 2,000 cases. The writers had their attention attracted to this subject by noticing that in their cases of artificial pneumothorax, the left lung was the one involved in 61 per cent. of one series of 66 cases and in 77 per cent. of another series of 31 cases. Study of 2,000 cases of tuberculosis under observation for from five months to several years, confirmed the peculiar gravity of left-sided lesions. There are various anatomic reasons for this, the smaller size of the left lung, the obtuse angle formed by the left bronchus and its smaller size, and the fact that the left lung has only two instead of three lobes. The fissures aid in checking the spread of a tuberculous focus. Roentgenoscopy often shows how the interlobar cleft seems to fence in the process. In the 2,000 cases, all but 658 were men. In the 516 cases of the first degree, 142 were in the left lung and 374 in the right. Only 7.5 per cent. of those in the left lung healed, while the total healed cases in the whole group was 83 per cent. Among the 1,052 of the second period, the left lung was affected in 472, and in this group 7 per cent. have died; 14 per cent. have grown worse; in 16 per cent. the process is in a stationary phase; 53 per cent. have improved and 11 per cent. are clinically cured. In the 580 with the process in the right lung, only 3 per cent. have died; 6 per cent. have grown worse, while 63 per cent. have improved and 16 per cent. are clinically cured. There was a cavity in the lung in 323 cases, including 205 in the left lung and 118 in the right. In this group, the left side cavities proved fatal in 38 per cent.; 31 per cent. of the patients have grown worse and 20 per cent. are in a stationary condition. In the right cavity group, 27 per cent. of the 118 cases have terminated fatally; 19 per cent. have become aggravated; 15 per cent. are stationary, 32 per cent. improved and 6 per cent. are clinically cured.

45. **Femoral Hernia and Pulmonary Tuberculosis.**—Veyrassat points out that while inguinal hernia may persist for years without serious functional disturbance, femoral hernia is liable to squeeze and drag on the intestine, setting up chronic irritation and local inflammation which may seriously impair the digestive functions. This in turn may impair the general health, so that the portals are opened to disease of various kinds. His attention was called to the subject by the comparative frequency of femoral hernia in the tuberculous. He assumed at first that it was merely a casual coincidence, but finally came to the conclusion that the femoral hernia

depressed the resisting powers by its disturbance of bowel functioning, and hence paved the way for the tuberculosis. All his patients with femoral hernia had had symptoms on the part of the bowel at times, attacks of pain, nausea and vomiting indicating some transient strangulation of the intestine. Such attacks of cramps and colic, with pains in the kidney region or suggesting lumbago, returned two or three times a year or oftener or at longer intervals, and sometimes resulted in actual strangulation. In almost all his operative cases of femoral hernia there was a history of such attacks or one just before the strangulation. All these disturbances disappeared permanently after the herniotomy. Even when there are no actual attacks, the small femoral hernia may keep up a condition of defective gastro-intestinal functioning by reflex influence, like chronic appendicitis. In some cases reported in detail the cure of the femoral hernia was followed by such improvement in the general health that the patients were able to throw off an apical process. The patients were able to conquer their tuberculous process as soon as digestion became normal. On the other hand, the coughing from a tuberculous process may aggravate a hernia and set up digestive disturbances, maintaining a vicious circle. In short, he declares, there is every reason to make it a principle to correct femoral hernia whenever encountered, both in prevention and in treatment of digestive and other affections. He always operates by the Berger technic and has never had a recurrence in any instance.

46. **Treatment of Mal Perforans by Resecting the Nerve Fiber Sheath of the Femoral Artery.**—Veyrassat and Schlesinger do not attempt to explain the reason why denuding the femoral artery, according to Jaboulay, has such a favorable influence on trophoneurotic lesions below. But their experience has confirmed its efficacy not only for mal perforans but for causalgia, for Raynaud's disease and other painful affections of arterial origin. In a personal case described at length, a man of 82 with tabes in an incomplete form, with triple mal perforans of the right foot rebellious to all treatment, was treated under local anesthesia by denuding the femoral artery in the triangle of Scarpa over an extent of 6 or 7 cm. It was exposed as if to be ligated, and then the tissues were sutured in tiers. The mal perforans at once began to slough off dead tissues and by the end of a week two of the ulcers had healed; the third and last had started to heal by the eighteenth day, and the delighted patient left the hospital the twenty-fifth day. The benefit may be from the stimulus imparted by the intervention to the vasomotor fibers. The operation may induce enough vasodilatation to overcome the constricting spasm from the altered sympathetic fibers. The benefit in Jaboulay's cases was durable. The trophoneurotic lesions became rapidly modified and, so far as experience has gone to date, they did not recur. The operation is absolutely harmless, they remark in conclusion, urging its application in rebellious cases of mal perforans. This operative method of treatment is called peri-arterial sympathectomy. See Abstract 29 above.

Correspondenz-Blatt für Schweizer Aerzte, Basel

February 17, XLVII, No. 7, pp. 193-224

49 *Foreign Bodies in the Air Passages and Esophagus. E. Schlittler. —p. 193. To be continued.

50 Rapid Control of Drinking Water for Troops on a Campaign. F. Messerli.—p. 203.

51 Case of Pigmented Urticaria. Tièche.—p. 211.

February 24, No. 8, pp. 225-256

52 *Treatment of Placenta Praevia. C. M. Wirz.—p. 225.

53 *Foreign Bodies in Air Passages and Esophagus. (Fremdkörper der Luft- und Speisewege.) E. Schlittler.—p. 232. Commenced in No. 7, p. 193.

54 *Quartz Mercury Vapor Lamp in Treatment of Goiter. (Behandlung des Kropfes mit der Quarzlampe.) A. Haslebacher.—p. 243.

55 Blistering from Application of Crushed Buttercup Leaves to Cure Warts. (Dermatitis bullosa durch Hahnenfuss-Gift.) W. A. Münch.—p. 244.

56 Exxperiences in America with Autolysin Treatment of Cancer. (Zur Autolysattherapie des Krebses.) F. Dumont.—p. 245.

March 3, No. 9, pp. 257-288

57 *Traumatic and Military Neuroses. (Ueber Unfall- und Militärneurosen.) C. Strasser.—p. 257.

58 Factors in Coagulation of the Blood. (Zur Methodik gerinnungsphysiologischer Studien.) A. Fonio.—p. 274.

49. See abstract 53.

52. **Treatment of Placenta Praevia.**—Wirz cites statistics to show that more than twice as many women die from placenta praevia in the home as in institutions. He declares further that the majority of deaths from placenta praevia occur from laceration of the cervix and septic infection, and thus are direct consequences of our therapeutic measures. Our efforts therefore should be directed to prevent tears and infection. The danger of embolism is practically beyond our control. Reinhard reported from Dresden a mortality of 42 per cent. among 117 women who had been treated by tamponing the vagina. Wirz declares that no midwife is capable of tamponing the vagina aseptically, but the Prussian "Midwives Manual" enjoins them to do it. Even physicians had better not attempt it, Wirz adds, as its usefulness does not offset the dangers it offers. In France, Pinard and others condemn it, as also many obstetricians in various lands. Wirz is convinced that rest and morphin will arrest the hemorrhage so that the woman can be taken to the hospital. When there is hemorrhage toward the end of a pregnancy, placenta praevia is probably responsible for it, and he warns earnestly against internal examination. By refraining from tamponing the vagina and from internal examination, he is confident that many otherwise doomed lives will be saved. When there are good labor pains, the fetus in good position and the placenta praevia lateral, he advises puncturing the bag of waters, eventually combined with pituitary solution. The bag should never be punctured until the uterus is contracting well. In the home, combined version is to be preferred to the inflatable bag, but in the clinic the latter is justified in certain cases, as it gives a favorable prognosis for the child. Institutions show 30 per cent. more children saved with the inflatable bag. He adds that in institutions abdominal cesarean section should be applied more frequently. It materially improves the outlook for the child, while the chances for the mother are no worse than with other methods of delivery.

53. **Foreign Bodies in the Air Passages.**—Schlittler extols the advantages of endoscopy, saying that in his fourteen cases of a foreign body in the lower air passages, eleven were extracted by the direct method, and it failed only in one case. In the two others such a long interval had passed that success was practically out of the question. Fifteen of the thirty-four foreign-body cases described in detail were in children. In the five fatal cases there were febrile complications on the part of the lungs when first seen, and two others were moribund.

54. **Treatment of Goiter with Mercury Vapor Quartz Lamp.**—Haslebacher has been quite successful with vibration massage in treatment of goiter, and last year applied the quartz lamp in twenty cases. The first patient thus treated was a young woman who for some time had had symptoms of stenosis at night from her goiter. The first exposure induced considerable erythema, but there was no further tendency to stenosis, and in two weeks, with a total of four exposures, the goiter had entirely disappeared and there has been no recurrence during the ten months to date. Before this the patient had been given manual massage treatment and iodin externally and internally, but without effect. In the series of twenty cases, the symptoms of stenosis subsided first, and the goiter grew softer after two or three exposures. In three cases the patients were pleased with the results from four exposures. Another required ten, and the large cysts proved entirely rebellious. All seemed to feel better during the treatment, and no untoward by-effects were noticed in any cases.

57. **Nontraumatic Military Neuroses.**—Strasser relates that the Swiss troops have now been on guard duty at the boundary for over two and a half years. Many of the men worry over neglected home affairs, while not appreciating the necessity for this border duty. The consequence is that neuroses are comparatively frequent, ranging from neurasthenia, insomnia, hysteric attacks and chorea to gastric and cardiac nervous troubles. They are always the aggravation of some preceding disturbance. Under ordinary conditions, he says, the

military service of the male youth of Switzerland is regarded as a recreation, an honor, and fine sport. The system of military training makes comparatively small demands, and then only for a short time. There is scarcely ever a question of social and economic hardship for the individual in his brief return for service every year. On the contrary, it is looked on as a pleasant vacation from the everyday routine, and has rescued many men from impending neurasthenia and neuroses. But the monotony of these years of border duty and the pressure of home worries have in many instances fanned a predisposition into a flame. Strasser adds that the greater the physician's experience the less often he diagnoses simulation. In estimation and treatment of these neuroses, the physician must be guided by the principles of treatment for traumatic and nontraumatic neuroses of any kind, seeking a compromise between the extraordinary demands made now by the state and the needs of the individual.

Gazzetta degli Ospedali e delle Cliniche, Milan

February, 11, XXXVIII, No. 12, pp. 177-192

59 Pulmonary Tuberculosis with Rapidly Fatal Course Consecutive to a Fall Injuring the Chest. L. Manfredi.—p. 177.

February 15, No. 13, pp. 193-208

60 Rapid Development of Gas Gangrene. A. Franchini.—p. 193.

Policlinico, Rome

February 25, XXIV, No. 9, pp. 265-304

61 *Epidemic Jaundice. (Appunti epidemiologici sulla spirochetosi itterogena.) C. Moreschi.—p. 265; (Sull' ittero epidemico castrense.) F. Micheli and G. Satta.—p. 268; (Le recenti conoscenze sull'ittero infettivo.) G. Trincas.—p. 271; (Itteri infettivi e spirochetosi.) T. Pontano.—p. 277; (Ittero epidemico.) M. Merighi.—p. 280. Discussion.

January, Surgical Section No. 1, pp. 1-48

62 *Primary Epithelioma of Humerus. (Contributo clinico all'amputazione interscapulo-toracica ed istopatologico ai tumori epiteliali primitivi delle ossa.) N. Giannettasio.—p. 1. Conclusion.

63 *Transvesical Prostatectomy. P. Tasca.—p. 17.

64 Conclusions from Experimental Research as to Treatment of Perforation of Stomach and Intestine with War Wounds. A. L. Soresi (New York).—p. 29.

65 Excision of Tumor in Orbit without Appreciable Cicatrix and without Removing Eyeball. (Sopra un caso di resezione dell'ottico, per endothelioma, mediante il mio processo modificato.) S. Calderaro.—p. 40. To be continued.

61. **Infectious Jaundice.**—This entire number of the *Policlinico* is devoted to reports and discussions of infectious jaundice which has been quite prevalent not only among the troops, but in certain civilian populations. Moreschi reports experiences with it among the troops on the Isonzo front and at Voghera, the three hospitals having had 361 cases between June and December, forming about 17.5 per cent. of the total 1,299 patients in the hospitals during that period. The disease was extremely mild, all the men recovering except two. Only 48 per cent. of the cases had a febrile course; it averaged six days, the maximum twenty-two. The spirochete was found in the kidney tissues of animals inoculated from the clinical cases and the urine, both from animals and man, was found to contain them. Guinea-pigs were inoculated most reliably with urine. The kidney findings in the inoculated animals were so severe that the experimental disease seems, he says, to be an acute hepatonephritis. As the clinical cases developed usually without direct contact, he thinks it probable that some intermediate host is involved. The Japanese authors found the spirochete in rats, and Courmont and Durand have recently reported that they found the spirochete in 8 per cent. of fifty sewer rats examined at Lyons. They state that there was no disease among the rats at the time, and the Lyons district had not been invaded by the epidemic jaundice. Hence they are inclined to regard the rat as a reserve focus for the infecting agent. Some English writers have reported finding the spirochetes in six of fifteen trench rats. Moreschi states that the only measures found effectual in stamping out epidemic jaundice were the isolation of the sick, careful disinfection of the excreta, and impressing the necessity for extreme care of the person.

Micheli and Satta have encountered several hundred cases of epidemic jaundice in the military hospitals of the Turin district. All were of the Chauffard pseudocatarrhal form of infectious icterus or the Patella benign type. The blood findings were constantly negative, and animals inoculated with the blood never sickened. Probably, they suggest, the spirochetes had disappeared from the blood by the time the men reach the Turin district. In only one instance, inoculation of a guinea-pig with the urine from a patient gave positive result. Serum from convalescents, injected into guinea-pigs along with a suspension of liver tissue from other guinea-pigs that had died from the infection, protected the animal against the infection in 33 per cent. of the cases, and retarded the experimental disease in another 33 per cent. Deviation of complement tests, etc., resulted negatively. Merighi gives the clinical histories of his twenty-nine cases; all seemed to do better when they were given ordinary food in abundance. Leporini calls the disease "trench jaundice." He comments on the constant but benign involvement of the lymphatic system. Veratti relates that he made special tests for picric acid in some of the 125 cases of jaundice, he encountered, but always with negative findings. The men reached his district, Pavia, only in the later stages of the disease, and inoculation of animals with blood from the patients was always negative. But with fresh virus obtained from Moreschi at the front he reproduced constantly in guinea-pigs typical icterohemorrhagic spirochetosis which he transmitted further to rabbits and rats. One rat died, but the other animals, after a period of intense jaundice, all recovered.

Gozi stated that he has records of 1,627 cases of jaundice in the military hospitals, a few in June, 221 in July and August, 504 in September and the rest in October and November, with three deaths. He also knows of about 100 cases in the civilian populace, all in adults, rarely in the aged. The three pregnant women presenting the disease all died in less than three days. A fourth, a parturient, after lying in coma for four days, finally recovered. At necropsy of the three soldiers, he noted intense central hyperemia of the meninges and brain, in one instance with hemorrhagic fluid in the ventricles. The liver in one case resembled that of acute yellow atrophy. Carpi has found mercury and arsenic useful in treatment.

62. **Resection of the Shoulder.**—Giannettasio has operated at one sitting in two cases for extensive primary epithelioma of the head of the humerus requiring interscapular-thoracic amputation. In both the tumor straddled important veins and lymphatics, and there was no sign of the tumor's becoming encapsulated while it had invaded the surrounding muscles and glands. The danger of generalization of the malignant disease in these cases is imminent, and the fatal outcome in many cases is due to this having occurred before the operation was decided on. Mussey and Conant operated for a cancer on the hand, amputating first the thumb, then the forearm, then exarticulating the shoulder, and finally resecting the scapula and clavicle. Exarticulation of the shoulder alone is not enough to check the progress of malignant disease in the upper end of the humerus. This is conclusively demonstrated by the large proportion of the cases in which a secondary operation was done on the scapula. In both his cases the operative wound healed smoothly in a week, and in about two weeks the men left the hospital in clinically good condition. He gives microphotographs of one of the tumors, describing it as probably an adenoma of embryonal character of thyroid origin.

63. **Transvesical Prostatectomy.**—Tasca reviews his experiences in eight cases of hypertrophied prostate in which he operated by way of the bladder according to Freyer's technic. The men were all over 70 and the operation proved highly successful in all but one. This was a man of 80 with dysuria for ten years. The last two months the catheter had been constantly required for complete retention, fetid urine with pus in the sediment and occasional attacks of "urinary fever." An attack of this kind developed the day after the transvesical prostatectomy and the man died within twenty-four hours. There was tardy hemorrhage in three cases; it was easily controlled by reopening the wound and draining the bladder or by rinsing out the bladder with a hot fluid. In one case there was transient incontinence of urine after the bladder was sutured. The prostate was very large (150 gm.) in this case.

Riforma Medica, Naples

January 6, XXXIII, No. 1, pp. 1-28

66 *Medical Roentgenology. M. Bertolotti.—p. 1. To be continued.
67 *The Cardiovascular Disturbances with Kidney Disease. (Patogenesi della sindrome cardiovascolare nelle nefropatie.) T. Silvestri.—p. 9.
68 Anatomic and Functional Localization of Peripheral Nerves in Treating War Wounds. (Neuropatologia di guerra. III.) L. Ferrannini.—p. 14.
69 Treatment of Hemoptysis. (Cura dell'emottisi.) M. Landolfi.—p. 24.

January 13, No. 2, pp. 29-56

70 *Influence of Physostigmin on the Vegetative Nervous System. (Fisostigmina e sistema autonomo.) C. Quadrone and F. Dematteis.—p. 42.

January 20, No. 3, pp. 57-84

71 *Influenzal Pneumonia; Eight Cases. (Polmonite da influenza; otto guarigioni.) N. Federici.—p. 71.
72 Vocational Reeducation of the Wounded. L. Ferrannini.—p. 73.

66. **Medical Roentgenology.**—This series of lectures on the interpretation of the findings in Roentgen examination is continued through six numbers of the *Riforma*. It is accompanied by numerous illustrations. This first part is devoted to study of the normal and the pathologic spine.

67. **Causes of Cardiovascular Disturbance with Kidney Disease.**—Silvestri reviews the various theories advanced to explain the cardiovascular syndrome with kidney disease. None stands the test of facts except the Traube-Cohnheim theory that the heart becomes hypertrophied in its efforts to force the blood through the compressed or otherwise damaged blood vessels in the kidney. He thinks that this alone is enough to explain the cardiovascular syndrome. The normal products of nitrogen metabolism are enough for the purpose, independently of any abnormal endogenous products. The latter may modify and aggravate the phenomena from uremia. The kidney has to have a certain amount of blood flowing through it to accomplish its physiologic task. He says that in the course of chronic nephritis a period of inadequate function may alternate with periods of good functioning. The former grow more and more frequent until inadequate functioning becomes permanently installed.

70. **Physostigmin and the Vegetative Nervous System.**—Quadrone and Dematteis report several cases out of their more extensive experience showing the beneficial action of physostigmin salicylate on disturbances resulting from partial or general weakness of the autonomic nervous system. In the first case, after curetting the uterus after an abortion, paralysis of the bladder developed, persisting unmodified for four days, with complete retention. Within a few hours after a single injection of physostigmin salicylate the bladder resumed normal functioning. In the second case, after the woman's efforts to induce abortion the pelvic nerve stopped functioning properly; all the organs normally innervated by it felt the lack of its influence, while the heart and stomach also showed the influence of defective functioning of the vegetative nervous system. Under the injection of the physostigmin the dysuria disappeared first, then the gastrocolic distention and the rapid pulse grew normal. In four days clinically normal conditions had been restored. In these patients the disturbances were evidently the result of a traumatic shock; in some of the others typhoid, emotional stress, or failing compensation in heart disease had brought on sudden insufficiency of certain parts of the vegetative nervous system, involving the heart, lungs or digestive apparatus, or all at once. The physostigmin, they say, seems to stabilize and tone up the entire vegetative nervous system. It may act by the intermediation of hormones, as it seems to stimulate the secretions in the various endocrine glands. It stimulates the intracardiac terminals of the vagus, and one of the cases reported shows that it can sensitize the heart and render it susceptible to the action of digitalis, previously ineffectual. The symptoms from paresis of the sacral segment of the vegetative nervous system include paralysis of the bladder and colon, and meteorism suggesting ileus from paralysis. The symptoms from exhaustion or giving out of the bulbar segment of the vegetative nervous system are acute enlargement of the heart with retrosternal pain, asystole, rapid pulse, dyspnea, cyanosis, etc., gastrectasia, vomiting and inversion or disappearance of the oculocardiac reflex. The mesencephalic segment may induce drooping of the lids, mydriasis and the paradoxic pupil reaction. The association of all these symptoms indicates complete miopragia of the entire segment involved. Physostigmin acts on the vegetative nervous system, and it seems to be tolerated in direct proportion to the indications for it.

71. **Influenzal Pneumonia.**—Federici relates that the symptoms deceptively simulated bronchopneumonia in his eight cases, except that there had been two days of frontal headache and rhinitis and sore throat before the lung symptoms developed. The infection ran a seven or ten-day course and the sputum was rusty, but there was nothing to suggest the crisis of pneumonia. All the patients recovered, but they were left more prostrated than is the rule with diplococcus infection. The course was somewhat shorter in children.

Prakticheskiy Vrach, Petrograd

1916, XV, No. 44-45, pp. 312-323

73 Diphtheria of the Ear and the Pathogenesis of Sudden Deafness in Scarlet Fever. (O difterii ukha i k patogenezu vnezapnoi glukhoti pri skarlatinie.) L. T. Levin.—p. 312. Commenced in No. 42, p. 300.
74 Investigation of the Motor Functioning of the Stomach. (K metodikie izsliedovaniya dvigatelnoi dieyatelnosti zheludka.) A. Z. Bilin.—p. 314. Commenced in No. 40, p. 288.

Russkiy Vrach, Petrograd

1916, XV, No. 50, pp. 1177-1200

75 Pirogoff on Gas Gangrene and Other Serious Complications of War Wounds. (Starie dokumenti po N. I. Pirogovu, etc.) N. M. Volkovich.—p. 1177.
76 Technic for the Wassermann Reaction. (K metodologii reaktsii svyazivaniya komplimenta na sifilis.) A. A. Bogomolets.—p. 1180.
77 Present Status of Radiotherapy of Uterine Cancer. (O liechenii raka matki luchistoi energiei.) N. M. Kakushkin.—p. 1185.
78 War Wounds of Vessels. N. A. Dobrovolskaya.—p. 1188. Continuation.
79 Automatically Spring Controlled Artificial Leg. (Iskusstvennaya noga dlya usiechennikh v bedrie s autom. zatvorom i tormazom v koliennom sustavie.) V. N. Pilkoff.—p. 1193.
80 *The Innervation of the Completely Isolated Heart. (Ob innervatsii sovershenno izol. serdtsa.) N. G. Ponirovsky.—p. 1194.
81 Hot Sulphur Springs in Amura District. G. N. Maksimoff.—p. 1196.

80. **Innervation of the Isolated Heart.**—Ponirovsky describes his method of studying the vagus and the sympathetic nerves in connection with the heart, both the trunk nerves and the finer ramifications. He gives curves showing the behavior of the heart under various influences, and says that physiologists, pathologists and pharmacologists by this means can study the behavior of the isolated heart in warm-blooded animals. His research was done on frogs, rabbits and dogs, mainly on tracheotomized dogs. The vagus and sympathetic nerve branches passing to the heart were easily isolated, under artificial respiration, and the effects of stimulation of the one or the other could be instructively studied. He thinks this simple method will prove a valuable assistance in medical lectures on the heart nerves of warm-blooded animals.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

February 3, I, No. 5, pp. 273-352

82 *Accommodation in the Elderly. W. Koster.—p. 276.
83 *Treatment of Paralytic Dementia. A. Q. van B. Houckgeest.—p. 281.
84 *Polycythemia Rubra. J. Lankhout.—p. 294.

82. **Accommodation in the Elderly.**—Koster remarks that in certain elderly persons the power of normal accommodation persists until unusually late in life. When this occurs he has found it always associated with presbyopic asthenopia, which seems to conflict with the accepted theories as to the mechanism of accommodation. He warns, however, that certain conditions may simulate a normal accommodation power. For instance, senile myosis may be so intense that well-lighted print can be read at almost any ordinary distance. Incipient cataract may induce a similar effect, as he describes. He gives the details of four typical cases of extraordinary good accommodation in men and women in the sixties and one man of 51. The latter had normal accommodation power in only one eye. The asthenopia in all these cases was not continuous; there was no pain except with near vision. At an age when accommodation is generally reduced, these patients were able to adjust accommodation to 3, 4 or 5 D. Koster has

no explanation to offer for this, but says that it certainly cannot be explained by the mechanism of accommodation proposed by von Helmholtz.

83. **Paralytic Dementia.**—Houckgeest thinks that tuberculin treatment is promising in treatment of not too far advanced paralytic dementia. The leukocytosis which follows may induce a salutary modification of conditions, possibly enhancing the resisting power of the tissues to the spirochetes. He combines with it intramuscular injections of mercury salicylate and 1 gm. sodium iodid internally daily. He begins with 0.01 mg. tuberculin from mixed human and bovine strains and increases to a maximal dose of 0.5 gm. The mercury salicylate dose is 100 mg. every fourth day. The details of six cases are given, all quite far advanced. They justify, he declares, treatment along these lines in all forms of syphilis of the central nervous system, repeating the courses at need.

84. **Polycythemia.**—Lankhout has encountered three cases of polycythemia which he here describes in full. The first patient was a man of 59 who complained of pain resembling lumbago. He had had more or less pain for three or four years, especially in the stomach and abdomen, coming on directly after meals and radiating to the back. It was mitigated by reclining after meals. On sitting up or walking after meals, the pain became like colic in the abdomen and there was also pain back of the sternum. By waiting for an hour after meals he can then exercise without disturbance. He is of a plethoric habit, the face purplish red with a cyanotic tinge; the fingers are of the drumstick type, the pulse 68, with high tension, and the temporal arteries are tortuous. There is no edema, no albuminuria or glycosuria. One physician ascribed the disturbances to the stomach and advised an operation; a third diagnosed the case as a pancreas affection. Lankhout was struck by the resemblance to what Ortner has described as intermittent angiosclerotic dyspragia of the intestines. There is probably also a dyspragia of the heart as well, and the man recently had an attack of typical intermittent claudication in the left leg. Ortner found at necropsy of his patient changes in the abdominal vessels which readily explained the phenomena. The patient succumbed to peritonitis after an exploratory laparotomy. This had been proposed in Lankhout's case, but was fortunately omitted. The spleen was enlarged, suggesting analogy with Vaquez' disease. The features of this are the congestion in the face, the enlarged spleen and the exceptional number of red corpuscles. In Lankhout's case the reds numbered 8,100,000, the whites 7,200. The retinal arteries are of the normal caliber, but the veins are large and tortuous as with choked disk. This is a characteristic and early sign of polycythemia rubra. The heart and lungs seem normal; the liver seems large on account of the abundance of blood in it. The congestion in the various organs is liable to induce tinnitus, dizziness, headache and pains in the legs suggesting erythromelalgia. In his case the blood findings showed excessive functioning on the part of the bone marrow. The Wassermann test was negative, and the reds were normally resistant. The blood as a whole is increased in amount, and the viscosity is abnormally high, and yet, with all this, hypertrophy of the heart is not an element in the clinical picture. In Lankhout's case the blood pressure was 160 to 175 mm. This feature of the case resembled Geisböck's polycythemia hypertonica (1904) although in this the spleen and liver are not enlarged. Lankhout reports two typical cases of this latter form in men of 51 and 60. Neither of his three cases of polycythemia offer any suggestion as to the etiology. The true nature of the trouble was not recognized in two of the cases for a long time. Two of his three patients were of Jewish families. Hemorrhages, thrombosis and apoplexy menace the patients. Withdrawal of from 300 to 500 c.c. of blood every four or six weeks, restriction to a vegetarian diet, to keep down the viscosity of the blood, and the avoidance of everything liable to injure the vessels have given most palliative benefit. Vague complaints suggesting congestion of organs, especially near the brain, and in the liver and spleen should call for examination of the fundus of the eyes. Erythromelalgic pains should suggest Vaquez' disease, and the blood findings will confirm the diagnosis.

Hospitalstidende, Copenhagen

February 7, LX, No. 6, pp. 121-148

85 *The Internal Ear with Inherited Syphilis. (Om hereditaer Syphilis i Labyrinthen.) L. Mahler.—p. 121.

85. **Inherited Syphilis and the Internal Ear.**—Mahler expatiates on the remarkable precision which the more recent functional tests of the internal ear have brought to our study of the effects of inherited syphilis on this organ. He summarizes recent literature on the subject, analyzing Alexander's experience with forty-three cases personally observed (1915), as also the experiences of Beck, Ruttin, Urbantschitsch and others. He reports also a case from his own practice, a girl of 14. The destructive lesion in the internal ear had induced total deafness on one side and nearly complete on the other. As he knows of instances in which salvarsan had reduced the small hearing capacity left, he did not venture to give salvarsan but started treatment with a course of pilocarpin, as Politzer recommends, following this with mercurial inunctions. No effect from the treatment was apparent on the internal ear. The consensus of opinion seems to be now that treatment should begin with a course of mercurial inunctions, following with salvarsan, and then a further course of inunctions. Alexander urgently commends salvarsan, having had two patients remarkably benefited among eleven given this treatment. Beck has had some patients improve under it but his later series have shown no benefit. Leidler has reported a case (1911) in which what was left of the hearing was almost completely lost after salvarsan treatment, and Wanner (1911) has had similar discouraging experiences in four cases. In Mahler's case, except for parenchymatous keratitis, there were no symptoms from the inherited syphilis outside of the internal ear. The Wassermann was positive. Heat and cold and rotation tests did not elicit any reaction, but the stronger mechanical tests induced nystagmus and vertigo. The findings were those of the so-called "fistula symptom" although there was no fistula. The fistula or pressure fistula symptom we expect to find when there is erosion or a fistula in the labyrinth and a destructive process or displacement of the contents of the fenestra ovalis. It is supposed that with normal tympanic membrane and normal middle ear or with uncomplicated suppuration in the middle ear, compression and aspiration do not induce any reaction in the static labyrinth. But in this case, although the membrane and the middle ear are normal, yet mechanical irritation elicits nystagmus and vertigo.

Hygiea, Stockholm

LXXIX, No. 3, pp. 97-144

86 *Presence of Colostrum in Mammary Glands of the Nonpregnant. (Om kolostrumförekomsten i de kvinnliga brostkörtlarna och dess betydelse såsom diagnostiskt hjälpmedel.) W. Gårdlund.—p. 114.

86. **Colostrum in the Mammary Glands of the Nonpregnant.**—Gårdlund had his attention called to this subject by finding colostrum in both breasts of a woman of 41 who had borne four children but was not pregnant at the time. She was in the hospital to have an edematous uterine myoma removed. Colostrum was also found in both breasts of a woman of 45 under treatment for gonorrheal salpingo-oophoritis. Examination ten months later, long after complete recovery from her pelvic trouble, and months after the menopause had been under way, showed still the presence of abundant milk in the mammary glands, resembling in every respect apparently colostrum milk. In a third case a young woman imagined hereself pregnant, and colostrum was found in the mammary glands, but the suspicion of pregnancy proved unfounded. In a fourth case an unmarried virgin of 28 consulted him on account of a permanent secretion from one breast which seemed to be colostrum. It could also be expressed from the other breast. She had had a tuberculous pulmonary affection at one time, but it had been clinically healed for some years.

Gårdlund after these experiences had the mammary glands of 393 women examined as they came to the Serafimer clinic for women's diseases. Excluding from his list five girls under 15 and fifty women who had been nursing children within a year, he found colostrum in 15 per cent. of eighty-two nonpregnant nulliparae; in 46 per cent. of 127 nonpregnant women who had borne from one to several children, and in 20 per

cent. of sixty-three women in the menopause. In a further group of fifty-six pregnant women, 54 per cent. showed the presence of colostrum; the women were at the third to the ninth month of the pregnancy, and the ages ranged from 20 to 40, two thirds of the positive cases being in women of 20. In ten other women it was impossible to decide whether they were pregnant at the time or not, but colostrum was present in the mammary glands of seven. Out of the total 338 women, the findings as to colostrum were thus positive in 120, that is, in fully 36 per cent., and in 209 nonpregnant, namely, 33 per cent. The presence of colostrum therefore cannot be accepted as an auxiliary sign of pregnancy, and its coincidence with gynecologic disease is probably merely casual.

Ugeskrift for Læger, Copenhagen

January 18, LXXIX, No. 3, pp. 85-128

87 *Pyelitis in Pregnant and Parturient Women. (Om Pyelitis i Svangerskabet, under Fødselen og i Barselsengen.) S. A. Gammeltoft.—p. 85.

January 25, No. 4, pp. 129-184

88 *Technic for Determining Sugar in the Blood by Bang's Micromethod. (Undersøgelser over Bang's Mikrosukkertitrering.) R. Ege.—p. 129.

89 *Phototherapy of Pulmonary and Bone and Joint Tuberculosis. (Om foreløbige Resultater af Lysbehandling ved Lungetuberkulose og kirurgisk Tuberkulose.) V. Schmidt.—p. 138.

87. **Pyelitis in the Pregnant and Parturient.**—Gammeltoft remarks that the first manifestations of pyelitis may deceptively simulate other intra-abdominal affections, and the difficulty in differential diagnosis is still further enhanced by the widely varying course in different cases. In about 70 per cent. of the cases the colon bacillus is responsible for the pyelitis, which confirms the assumption that the intestines are the source of the infection in many cases. Constipation and slight gastro-intestinal disturbance are peculiarly common in the pregnant. The acute form may develop suddenly, with or without a chill, with fever and depression. Nausea and vomiting are common. The pains at first may suggest labor pains, or they may be diffuse for a time but after a few hours they become localized in the kidney region, usually the right but sometimes on both sides. The tongue is not dry as with abdominal trouble. There may be pains and tenderness along the ureter and bladder, also in the legs. The tenderness in the iliac fossa may be pronounced, but the symphysis generally is not or very little tender. Inquiry usually elicits that there have been lumbar pains for a time or unduly frequent urination, and the urine may have caused smarting. The urine looks turbid and usually gives an acid reaction. The putrid odor suggests colon bacillus infection, and there may be albumin. The microscope is generally sufficient, without bacteriologic examination. Sometimes the urine is entirely normal even with unmistakable signs of pyelitis, the ureter having become obstructed and only the urine from the sound kidney reaching the bladder. This is particularly liable to be the case in pyelitis in a parturient. The temperature may fluctuate abruptly from 104 F. to subnormal but the general condition usually keeps good and the pulse regular. After eight or ten days of treatment the acute phase passes into a latent or chronic stage. This latent phase may be the first manifestation and it may be overlooked, as the only symptoms may be pains in the lumbar region and rather frequent desires to urinate, all of which are apt to be ascribed to the pregnancy alone. In cases of this kind the urine should be examined both chemically and with the microscope; leukocytes and bacteria will be found in the urine although not in such numbers as in the acute form.

The ureter that has been stretched and compressed during the pregnancy may get kinked during the puerperium and set up sudden acute disturbances. These are liable to be mistaken for puerperal fever. Acute pyelitis is liable to be mistaken also for beginning pneumonia, but the pulse and respiration are not so high as with the latter, and the pains with pyelitis spread downward, both with deep breathing and with movements. It may be difficult to distinguish between pyelitis and appendicitis. Pain on compression of the descending colon from the left iliac fossa speaks for appendicitis, also rigidity of the muscle wall. The symptoms of appendicitis during pregnancy are not so clear and pronounced as under other conditions, especially the peritoneal symptoms. Differentiation often depends on the urine alone, and pyelitis may occur as a complication of acute or chronic appendicitis. Cystoscopy and catheterization of the ureters require the hospital environment, but they are conclusive and, properly done, harmless, even near term. In treatment, bed rest, moist heat to the region, and copious drinking of milk, lemonade, boiled water and weak tea, may be supplemented with salol plus sulphuric acid mixture, or hexamethylenamin can be used. He remarks that the latter is liable to induce slow and painful discharge of urine or hematuria and increase albuminuria and tube casts. The urine must be kept acid in order to get the benefit from hexamethylenamin, and Gammeltoft gives with it in a little water a tablespoonful of a mixture of 10 gm. dilute hydrochloric acid; 90 gm. syrup of raspberry and 200 gm. distilled water. He gives the hexamethylenamin or its equivalent in 50 cg. doses every four hours. Catheterization of the ureter may be necessary in case of retention, but he warns against the temptation to rinse out the kidney pelvis when the catheter is in place. This is liable to spread the infection to the kidney proper. The catheter must not be left in the ureter as this is liable to bring on hemorrhage. Turning the woman on her other side may release the ureter from pressure and put an end to the retention without further measures. Another simple measure which may prove useful is to rinse out the bladder; the reflex reaction may overcome any spasmodic contraction of the kidney pelvis. When the acute attack has subsided, but leukocytes and bacteria still are found in the urine, he lets the patient get up after she has had no fever for eight days, but salol had better be kept up, 50 cg. four times a day. The urine should be examined every week and there should be considerable intake of fluids. To ward off recurrences an autogenous vaccine may prove useful. When a parturient develops high fever, the urine should be examined without delay, and no active measures should be attempted. Infected urine soiling the vagina does not seem capable of starting puerperal infection.

Changes of position are particularly likely to aid in treatment of pyelitis during childbirth. He keeps the patient in bed till the urine is free from leukocytes at least. Bacteriuria may long persist. It should be perseveringly attacked with salol and vaccine. He warns that the bacteria may change during the course of the pyelitis, and the autogenous vaccine has to be made from the actual strain at the time. If the pyelitis drags interminably, concretions must be sought or prolapse or displacement of the uterus, or adnexa trouble. The urethra should also be examined; the bladder mucosa may protrude and lead to reinfection of the bladder urine. Achylia, colitis, chronic appendicitis or some chronic gynecologic affection may be responsible for keeping up the pyelitis.

88. **Determination of Sugar Content of the Blood.**—Ege has been applying simultaneous tests to the blood, Bang's micromethod, Riegler's and the fermentation tests. Bang's method has a wide range of error, he emphasizes, the outcome varying with the length of time the fluid is boiled and the amount of heat applied. But it can be relied on with confidence if the test is applied with uniform technic, giving a longer time for reduction and using a gas regulator.

89. **Phototherapy of Tuberculosis.**—Schmidt reports the results of treatment of tuberculous patients at the Finsen Light Institute at Copenhagen. He says that Finsen's arrangement of carbon arc lights gives rays nearest in chemical action to the sun's rays, and the results in thirty patients with pulmonary tuberculosis are recorded. The exposures were at first only thirty minutes but were gradually lengthened to a total of two and a half hours daily. The patients reclined, the lamps at a distance of about 30 inches. The total exposures averaged about 500 hours. The results were less pronounced than with surgical tuberculosis. No influence on the fever or night sweats was apparent, nor on the expectoration or bacilli in the sputum. The patients rather enjoyed the experience, and this in itself is a gain. It is evident that much longer courses are necessary for decisive effects, and that the indications for this treatment need further limitation.